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Original Articles.

THE PRESIDENT'S ADDRESS.

DELIVERED AT THE FIFTY-FIRST ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, N. J. JUNE 5-8, 1900.

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PHILADELPHIA.

Two duties seem to me to devolve on the President of the AMERICAN MEDICAL ASSOCIATION in his annual address: 1, to consider the condition of the ASSOCIATION, with any suggestions that may be made for improvement, and 2, to take up some subject of professional interest which may be properly considered before the chief representative medical body of the United States.

In pursuance of the former, it is a great pleasure to me to congratulate the ASSOCIATION on its marked prosperity. The AMERICAN MEDICAL ASSOCIATION now numbers about 9000 members. A large number, truly, but when we consider that there are over 100,000 regular physicians in the United States, it is strange and anomalous that this ASSOCIATION should comprise less than one in ten of these physicians. I call your attention to this important matter in order that every member of the ASSOCIATION during the coming year shall try at least to induce another fellow physician to join the ASSOCIATION and thus double its influence for good.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

One of the most important functions of the ASSOCIATION is the publication of THE JOURNAL. Here, again, I have only words of encouragement. The number of subscribers to THE JOURNAL is about 15,000—a number, undoubtedly, in excess of that of any other medical journal in the United States, and I suspect only surpassed by the *British Medical Journal,* which publishes over 21,000 copies weekly. But it is not only on the number of subscribers that the ASSOCIATION is to be congratulated, but especially on the quality of the papers published in THE JOURNAL. It is, however, not only idle words of vague praise that we should bestow on the trustees and the able editor of THE JOURNAL, but we should recognize that never before in the history of THE JOURNAL has it been so well conducted, its pages so filled with admirable original articles and its influence for everything that makes for the best in medicine so potent as at present.

THE RUSH MONUMENT FUND.

Dr. Albert C. Gihon resigned at the last meeting as the Chairman of the Rush Monument Committee. It seemed to me that his successor should be a physician rather than a surgeon, and from Dr. Rush's native city. Accordingly, I appointed Dr. James C. Wilson to the vacancy.

The Commitee reports actually in hand a little over $11,000. This sum is too large to go backward, and it is not enough to go forward. In the hands of various state organizations, and possibly others, there are several thousands of dollars, I believe, which have been pledged to this fund. I recommend that action be taken, looking to the early completion of the fund. All the more is this suitable, when we remember that there will be erected in the city of Washington this year, or early next, a costly monument to Hahnemann, for which Congress has given a site.

THE ANTIVIVISECTION BILL.

Early in the session of the present Congress, there was introduced into the Senate, bill No. 34, commonly called the "antivivisection bill." The immense detriment that this would work both to man and animals was so evident that I deemed it my duty as your President to take the most active steps to prevent its becoming a law. I sent out letters to the president and secretary of every state medical society in the country, to prominent members of the profession in every state, to a large number of influential men in the profession all over the country, and to college presidents, and others who could direct public opinion, and by all means in my power strove to arouse a public sentiment against the bill. I wish to bear public testimony to the enthusiasm and the unanimity with which my appeals were received. The profession in every part of the country responded nobly and exercised a wide and, I believe, an enduring influence on senators and representatives in establishing and confirming their judgment as to the inhumanity of any such bill.

In response to a communication addressed to the chairman of the Senate Committee on the District of Columbia, a hearing was granted in Washington before the subcommittee having charge of the bill, at which both the friends and the opponents of the measure were present and presented their arguments. Among those who spoke against the bill were Drs. William H. Welch,[1] Henry P. Bowditch, H. A. Hare, William Osler, Mary Putnam Jacobi, George M. Kober, Howard A. Kelly, D. E. Salmon, Brig.-Gen. George M. Sternberg, surgeon-general U. S. A., Bishop Lawrence, of Massachusetts, and myself. Certainly a more able array of speakers could hardly have been obtained, and I wish in your name, and in the name of humanity, to thank them for their self-sacrificing help.

Although in two prior Congresses the Committee on the District of Columbia had unanimously reported in favor of the bill, I am happy to say to you that the present committee has so far changed its views that I have reason to believe that the bill will either slumber in committee or be reported negatively. While it is to be hoped that this is the end of the present bill, it is by

1. THE JOURNAL May 19 and 26.

no means certain that it is the end of the agitation of those who are so blind to the progress of medicine and, therefore, to the dictates of humanity, but, I have no doubt that the effort will be renewed at some future time. If this should take place, I commend to the then President of the AMERICAN MEDICAL ASSOCIATION the duty of opposing the bill with all the vigor which he can use.

Among the important contributions to antivivisection literature evoked by this discussion, none is more valuable than the letter addressed to the Chairman of the Committee on the District of Columbia, in opposition to the bill, by President Eliot, of Harvard College, which I venture to read to you:

HARVARD UNIVERSITY.

CAMBRIDGE, March 19, 1900.

Dear Sir:—I observe that a new bill on the subject of vivisection has been introduced into the Senate, bill No. 34. This bill is a slight improvement on its predecessor, but is still very objectionable. I beg leave to state very briefly the objection to all such legislation.

1. To interfere with or retard the progress of medical discovery is an inhuman thing. Within fifteen years medical research has made rapid progress, almost exclusively through the use of the lower animals, and what such research has done for the diagnosis and treatment of diphtheria it can probably do in time for tuberculosis, erysipelas, cerebrospinal meningitis, and cancer, to name only four horrible scourges of mankind which are known to be of germ origin.

2. The human race makes use of animals without the smallest compunction as articles of food and as laborers. It kills them, confines them, gelds them, and interferes in all manner of ways with their natural lives. The liberty we take with the animal creation in using utterly insignificant numbers of them for scientific researches is infinitesimal compared with the other liberties we take with animals, and it is that use of animals from which the human race has most to hope.

3. The few medical investigators can not properly be supervised or inspected or controlled by any of the ordinary processes of Government supervision. Neither can they properly be licensed, because there is no competent supervising or licensing body. The Government may properly license a plumber, because it can provide the proper examination boards for plumbers; it can properly license young men to practice medicine, because it can provide the proper examination for that profession, and these boards can testify to the fitness of candidates, but the Government can not provide any board of officials competent to testify to the fitness of the medical investigator.

4. The advocates of antivivisection laws consider themselves more humane and merciful than the opponents of such laws. To my thinking these unthinking advocates are really cruel to their own race. How many cats or guinea-pigs would you or I sacrifice to save the life of our child or to win a chance of saving the life of our child? The diphtheria-antitoxin has already saved the lives of many thousands of human beings, yet it is produced through a moderate amount of inconvenience and suffering inflicted on horses and through the sacrifice of a moderate number of guinea-pigs. Who are the merciful people—the few physicians who superintend the making of the antitoxin and make sure of its quality or the people who cry out against the infliction of any suffering on animals on behalf of mankind?

It is, of course, possible to legislate against an improper use of vivisection. For instance, it should not be allowed in secondary schools or before college classes for purposes of demonstration only; but any attempt to interfere with the necessary processes of medical investigation is, in my judgment, in the highest degree inexpedient, and is fundamentally inhuman.

Very truly yours, C. W. ELIOT.

HON. JAMES MCMILLAN.

Coming from such a high source, I can not but feel that it will carry conviction, both by the force of its statements and the lucidity of its logic. I call your especial attention to the ground taken by President Eliot, that it is the antivivisectionists who are inhuman and cruel to the last degree, because they would condemn both man and animals to suffering and death by impeding the progress of medical science.

MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

By its constitution, the members of the ASSOCIATION consist: 1, of delegates; 2, of members by invitation; 3, of permanent members, and 4, of members by application. I wish to call your attention to the desirability of limiting the members by invitation to foreign delegates, eminent foreigners whom the Sections may desire to invite to read papers and take part in the discussions, to members of the medical staff of the United States Army, Navy and Marine-Hospital Service, and to the occasional visiting physicians from our possessions outside of the limits of the United States proper. It has been the custom in most of the Sections to invite medical men of distinction who are not members of the ASSOCIATION to read papers before the Sections. Some of these gentlemen have been even openly hostile to the ASSOCIATION, and yet year after year have had the courtesies of the ASSOCIATION extended to them. They have availed themselves of these privileges and advantages and yet not only privately, but sometimes publicly, have expressed their hostility to the ASSOCIATION.

It seems to me that the time has now come when this practice should cease. Membership in the ASSOCIATION is open to every American, and any one who does not choose to avail himself of the privileges and advantages of membership by joining the ASSOCIATION should be debarred from them.

During the present year I have sent a courteous circular letter to each person so invited by the various Sections, but not a member of the ASSOCIATION, enclosing a form of application and inviting him to become a member of the ASSOCIATION. I am glad to say that a very large number have availed themselves of the opportunity of doing so. The Constitution prescribes that the members by invitation shall be invited by "the meeting after an introduction from and being vouched for by at least three of the members present or three of the absent permanent members;" and in the order of business, the third order is the "reception of members by invitation." No such formality, it seems to me, is desirable. The extending of such an invitation to distinguished foreigners and others that I have suggested may well be left in the hands of the Sections, with the exception, it might be, occasionally of persons of unusual distinction.

SECTION ON PATHOLOGY AND THE PATHOLOGIC EXHIBIT.

One of the important features of the AMERICAN MEDICAL ASSOCIATION is to promote the scientific side of medicine. It has seemed to me that the ASSOCIATION was not fulfilling its duty to scientific medicine in one particular. There is scarcely a more important branch of modern medicine than pathology and bacteriology, and yet no Section for the consideration of these subjects is provided. Although it was not authorized by the ASSOCIATION, I had such confidence in your intelligent and hearty co-operation that I ventured to ask a number of gentlemen to act as a provisional or unofficial committee to organize a Section on Pathology and Bacteriology, under the chairmanship of Dr. Ludvig

Hektoen, of Chicago. These gentlemen have ably performed their task and they have presented a most attractive program. You will be asked officially to authorize the formation of such a Section, and I can not doubt that your action will be.

In connection with this, I also appointed a provisional unofficial committee on a pathologic exhibit, in charge of a committee, of which Dr. Joseph Stokes, Mooresown, N. J., is the chairman. Dr. Frank B. Wynn, Indianapolis, Ind., has acted as secretary of both committees. I but ask you to visit the adjoining exhibit to be convinced of how faithfully and intelligently this committee has performed its task. They communicated with a large number of medical schools, museums, and individuals and have met with a most hearty response from all sides. They did not deem it wise that the exhibit should be either by states or by institutions, lest there should be aroused a rivalry, which would in some sense smack of egotism and lead to future disaster; but asked all to subordinate their individual and institutional interests to the broad general interests of science.

THE ANNUAL EXHIBIT.

The management of the annual exhibit is a matter of considerable importance to the ASSOCIATION. The exhibit is an important financial aid to the local committee which has charge of the meeting of the Association. So far as I know there are no rules governing the charges, the classes of exhibits, or other regulations by which this committee may be guided. Each new committee is a law unto itself. It has seemed to me that if there could be a permanent committee on the annual exhibit, this would be of great advantage, especially if the committee were made up, in part at least, of those who had had experience with former exhibits. It would seem to be desirable that each year the chairman or some other member of the committee on the last exhibit should be added to the committee to replace one of the earlier members, who would retire. I recommend, therefore, that such a committee, to have charge of the exhibit at the annual meeting, be appointed this year, this committee to have power to add to its numbers and nominate a chairman who shall reside in the place at which the succeeding meeting is to be held, and as many other local members of the committee as may be deemed necessary to carry on the work. The general committee could formulate general rules governing the exhibit and the local committee could carry out the details.

THE SECTIONS.

The work of the Sections has been, heretofore, in many respects admirably done. The tendency to correlate the papers which are presented under certain specific heads, and to select one or more important topics for consideration, inviting a few distinguished speakers to open the debate, which is then thrown open to all, has been marked in the last few years. The advantages of such a course are so obvious that I trust the chairmen, secretaries and executive committees of the various Sections will hereafter strive for even more important debates and more important results than have been thus far achieved. Room should certainly be reserved for a certain number of volunteer papers, but to allow the major part of the time of the Sections to be taken up by a mass of heterogeneous papers on unrelated topics would be a great misfortune.

The policy of THE JOURNAL, also, in connection with the various papers read before the Sections is an important one. Papers vary greatly in their merit and importance, and it would seem to me that to the trustees and the editor of THE JOURNAL should be confided the entire responsibility of selecting the more important papers for publication in full, and of presenting the less important in longer or shorter abstracts. The example of the *British Medical Journal* may well guide us in this matter.

I ventured to correspond with the chairmen and secretaries of the various Sections as to the hour of the Section dinners. Very frequently this has been fixed at nine o'clock, an hour which was too late for the usual dinner and too early for a second one. Moreover, when the dinners are fixed at so late an hour, if they are to be followed by after-dinner speeches the hour at which the Sections can break up and seek a much-needed rest is so late that it interferes seriously with the work of the succeeding day. Almost without exception, the officers of the Sections preferred the usual dinner hour, about seven o'clock, both for material and intellectual reasons. It is often difficult to arrange this matter with the hotels at which the dinners are usually given, but the ASSOCIATION, I think, might insist, as but a single evening is occupied by these dinners, that for the one occasion the hotels who profit so largely by the meeting should accommodate the ASSOCIATION in this matter.

THE COMMITTEE ON THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

Early last autumn Prof. William Osler, who had been requested to organize the American Committee on the coming International Congress, invited the President of the AMERICAN MEDICAL ASSOCIATION, and the Presidents of the various associations of medical specialists to form a committee to assist in organizing the International Medical Congress which is to assemble on August 2, in Paris. This Committee, and especially its chairman and secretary, have done the work exceptionally well. Of course, there is need of money for printing, postage, and clerk hire. At a recent meeting in Washington, the various societies, represented by their chairmen, were invited to contribute $25 each toward the expenses. I recommend that an appropriation of $50 be made from the funds of the AMERICAN MEDICAL ASSOCIATION toward the expenses of this committee.

ENDOWMENT OF MEDICAL SCHOOLS.

Turning, now, from the affairs of the ASSOCIATION, I wish to say a few words in reference to a subject of paramount importance which I am sure will appeal to the sympathies of all present, namely: the need for endowments for medical schools.

The tide of charity in the United States has reached a remarkable height. The *Chicago Tribune* publishes an annual list showing that in 1894 the charitable gifts and bequests in the United States amounted in round numbers to $20,000,000; in 1895, to $29,000,000; in 1896, to $34,000,000; in 1897, to $34,000,000; in 1898, to $24,000,000; and in 1899, to the enormous sum of nearly $80,000,000.

But a small portion of this charity, however, has been bestowed upon medical schools. It is mostly to colleges, theological schools, hospitals, museums, and libraries, that the principal amount has been given. The cause for this, I think, has been chiefly the vicious method in which all our medical schools were formerly conducted. They were practically joint-stock companies, organized

for the benefit of the faculties. As Professor Bowditch has said, one might as well expect the public to endow a cotton-mill as to endow such a school. The day of these private enterprises is now, happily, nearly past. The respectable schools of medicine are now conducted by trustees, a body of men wholly apart from the faculties, who manage the affairs of the medical school just as they would those of a university, taking control of the income and expenditures of the school, placing the professors and other teachers upon salaries, and conducting the affairs of the institution on broad lines of educational progress. Partly as a result of the influence of the profession exerted through the ASSOCIATION, the courses of study at the medical schools of to-day, and, therefore, the necessities of the student, are so wholly different from those of twenty-five years ago that it may be well termed a new era in medical education. As a consequence of the broadening and lengthening of the medical course of study, the cost of medical education has enormously increased. The public at large does not at all appreciate this changed condition, and even you, members of the profession itself who may have graduated many years since, scarcely appreciate to its full value the difference. As a consequence, the fees of the students, which can scarcely be raised beyond the present amount, are wholly inadequate for providing a proper medical education, and the medical school appeals, as does the college and the theological and the technical school, for wise and liberal endowments in order to provide this suitable education. "There is no branch of education," says President Eliot of Harvard, "which more needs endowment. Medical education is very expensive, because it has become, in the main, individual instruction. Large lectures and crowded clinics are seen to be of really very limited application, so that year by year the medical teaching becomes more and more costly."

What were the necessities of a medical school twenty-five years ago? Two lecture-rooms, in which seven professors talked, a dissecting-room, and, if possible, a clinic, which was occasionally, but rarely, in a college hospital. Practically the instruction which the student obtained, with the exception of dissecting, was limited to "book-knowledge" and "ear-knowledge." The student was not brought into contact with any patients or any concrete facts, observations, or experiments. He only listened to what his teachers said about them. Millions were given to hospitals in which the sick were treated, but only sixpences to medical schools, in which the men who are to care for their future patients were trained. "Spain," says Lyman Abbott, "in the late war had nineteenth-century guns and sixteenth-century men behind them. We know what came." Our splendidly-equipped hospitals are the nineteenth-century guns. Insufficiently trained doctors are the sixteenth-century men. The time has certainly come when the "men behind the guns" must equal in efficiency the weapons with which they do the fighting.

To perform a tracheotomy and rescue a child suffering from diphtheria is a dramatic occurrence which appeals to every one. To conduct a long series of experiments in the laboratory, by means of which the cause of diphtheria shall be found and the necessity for a tracheotomy avoided, appeals only to the educated few; yet the service done by the operation is a service only to the one patient who may be rescued by the knife, while the other is a service to hundreds and thousands of patients who, for all time, will escape both the knife and the disease. Yet, such a series of experiments in preventive medicine brings no reward in money, a limited reward in fame, and only its largest reward in the consciousness of giving a great boon to humanity, for which it never can pay.

The era of the man who simply listened to what his teachers had to tell him and then went on his way, as a "rule of thumb" man, is happily past. This is the era of the trained man and the trained woman, and training means opportunity provided by the community and time, labor and money given by the man.

Let us look for a moment at what a medical school now needs. It stands for two things: 1. "Thing-knowledge," instead of "book-knowledge" and "ear-knowledge," teaching the facts of modern science, by scientific methods; that is to say, methods of precision. But 2, no medical school should be content simply with imparting the knowledge that exists. It should push back the boundaries of ignorance and, by research, add to existing knowledge.

In the accomplishment of the first duty of the medical school, there are required, first, didactic lectures. I am not one of those who believe that the day of the didactic lectures is past. "Never," said President Faunce, of Brown University, in his notable inaugural, "never shall we be able to do without the personality of the teacher, flaming with enthusiasm for knowledge, pressing up the heights himself and helping the student on."

In the 156 medical schools in this country there are, perhaps, over 1500 members in their faculties. In all of them are inspiring teachers flaming with enthusiasm, for a not inconsiderable proportion may properly be so described, and the influence of such enthusiastic teachers is felt by the entire class. One or two such men in every school make a good faculty.

Besides the didactic lectures, a good working library and a reading or study room is a requisite. And it is a matter of no little encouragement that in the reports of the U. S. Commissioner of Education for 1898, 72 medical schools reported 151,433 volumes in their libraries.

The great difference between the modern method of teaching medicine and the older method consists in *laboratory instruction* and *clinical instruction,* both of which must be individual. Laboratories are very costly. They require buildings, equipment, and assistants. The number of laboratories required in the present day in a fully equipped medical school is astonishing. First, the dissecting-room—the anatomical laboratory—and along with this a laboratory of histology, and another which may be combined with it, a laboratory of embryology. Next, a physiological laboratory, in which each student will not become an accomplished physiologist, but will become familiar with physiological methods and be trained in exact and careful observation; a laboratory of chemistry and, combined with it, especially, a laboratory of physiological chemistry; in the department of materia medica, a laboratory of pharmacy, where the student will not become a good pharmacist, but will learn the essentials of pharmacy so that he will not make, at least, gross mistakes, which, otherwise, would constantly occur. Still more important is a laboratory of pharmacology, in which he will learn the action of drugs and be prepared rightly to use them. In obstetrics, a laboratory of practical obstetrics and obstetric operations is essential. In surgery,

e needs a laboratory in which he shall be taught all the rdinary surgical operations. In pathology, he needs a aboratory of morbid anatomy, a laboratory of bacteri- logy, and a laboratory of hygiene. The mere statement f this catalogue of thirteen laboratories will enforce the act that enormous expense not only for the installa- ion, but also for the running expenses, will be required. o show what one university abroad does, Professor elch has stated[2] that the Prussian government expends, utside of the salaries of professors in the University of erlin alone, over $50,000 annually. What American edical school can show anything approaching an en- owment which will provide such a sum?

And what has not the laboratory done for us within he last few years. It has discovered the cause of uberculosis, tetanus, suppuration, cholera, diphtheria, ubonic plague, typhoid fever, erysipelas, pneumonia, landers, and a host of other diseases; it has shown us ow to avoid all danger from trichina, so that our en- ire commerce in hog-products is conditioned upon the aboratory; it has shown us how to banish suppuration, rysipelas, tetanus, and pyemia from our hospitals and educe our death-rates after operation from 50 or 33 per ent. to 10 per cent., 5 per cent., 1 per cent., and often ven fractions of 1 per cent; it has given us a really cientific hygiene in which we no longer guess but know; t has shown us the rôle of the mosquito in malaria, of he rat in bubonic plague, of the fly in typhoid fever; it has given us the power to say to diphtheria "thus far halt thou go and no farther;" it will give us the power o utter a pæan of victory over typhoid, cholera, bubonic lague, tuberculosis, yellow fever, cancer, and other mplacable enemies of the human race—and yet there re those who would stay this God-given hand of help!

And the laboratory has had not only its devotees but ts heroes. Listen to the story of but one. Dr. Franz Müller, of Vienna, was one of those who in his investi- gations of the bubonic plague in 1897 contracted the readed disease from the bacilli in his culture-tubes. When he became certain that he was infected he im- mediately locked himself in an isolated room and posted message on the window pane, reading thus: "I am uffering from plague. Please do not send a doctor to me as, in any event, my end will come in four or five days." A number of his associates were anxious to ttend him, but he refused to admit them and died lone, within the time he predicted. He wrote a fare- well letter to his parents, placed it against the window, so it could be copied from the outside, and then burned the original with his own hands, fearful lest it might be preserved and carry the mysterious germ. Can you find me a finer example of self-sacrificing altruism? Was ever a Victoria Cross more bravely won?

But the establishment of laboratories, with their at- tendant expenses, is not the only improvement in our medical curriculum. Every well-conducted medical school requires a large hospital in connection with it. Here must be installed again a fourteenth laboratory of clinical medicine in which all the excretions of the body will be examined, tumors studied, cultures and blood- counts made, or else the patients in the hospital, from the modern point of view, are neglected. It is not too much to say that a patient requiring such examinations, be he the poorest of the poor, has his case more scien- tifically studied, more exactly measured, more precisely treated than most rich patients in sumptuous homes.

Again, the individual instruction to which President Eliot referred is now carried out in all of our best medical school hospitals by the establishment of small ward-classes, by whom or before whom the patients are examined, prescribed for and operated upon by the professor or instructor, each student bearing a part; and so, by having his investigations directed, his powers of observation cultivated, his mistakes pointed out, his merits applauded, the student graduates from the medical school equipped as none of us, alas, ever had the opportunity to be. All of these laboratory and ward classes imply an enormous increase in the number of assistants, young men striving not only to perfect themselves, but by teaching, to forge to the front so that the best men will win in the struggle for preferment.

Again, the course of study has been prolonged from two years, as it was 20 to 25 years ago, to four years, and in addition the terms have also been lengthened. When I was a student the course of study consisted of two sessions of about 19 weeks each, or 38 weeks in all. Now the course consists, as a rule, of four sessions of 32 weeks each, or a total of 128 weeks, an increase of 90 weeks, nearly 3½ times as much as it was 25 years ago. In 1885, 103 schools had courses of two years, and 5 schools courses of three years. In 1899, 2 schools had courses of two years, 10 of three years, and 141 of four years.[3].

It can be easily seen that from this additional time required another source of expense has arisen besides the increased number of assistants. The time given to teaching by members of the faculty, as a rule, has been more than tripled, as compared with twenty-five years ago. In addition to this, professors in charge of laboratories must practically give their whole time to the work and are precluded, therefore, from any income from practice. These men must receive salaries sufficient for them to live on.

Surely this statement of the difference between the education given twenty-five years ago, which required but little expenditure of money and resulted in considerable incomes, and the modern methods of education in the laboratory and the hospital, as well as the lecture-room, which require enormous expenses, is an ample reason for large endowments.

But, the function of the medical school, as I have said, should not be limited merely to the imparting of existing knowledge. No school is worthy of the name that does not provide for greater or less research work by which substantial additions to our knowledge may be made and the facilities and the results of the healing art made more efficient for the welfare of mankind. Twenty-five years ago there were practically few young men who were fitted for research work, especially laboratory work. Now every well-equipped school has attached to it, in one way or another, a score or more of young men who are eager for work, longing for the opportunities for usefulness and distinction if they can only obtain a bare living. When in my own school I look around me and see these young men thirsting for such opportunities, I am often heartsick at our want of facilities for this purpose, and I long with an intense longing for some wise and munificent friend of humanity who will endow post-graduate scholarships, fellowships and laboratories for just such an end. Our hospitals do a magnificent work in

2. Higher Medical Education and the Need for Its Endowment. *Medical News*, July 21, 1894.

3. Monographs on Education in the U. S.; No. 10, Provisional Education, p. 11. James Russell Parsons, Jr., Dept. of Education for the U. S. Commissioner to the Paris Exposition of 1900.

charity, helping the sick and the forlorn, the weak and the suffering in a way which appeals to the charitable instincts of our fellow-countrymen, and to this appeal they have responded most generously. *But I venture to say that the medical school which trained a Lister, a Pasteur or a Koch has done more for humanity than all the hospitals of this country combined.* The modest laboratory at Würtzburg consisted chiefly of a Ruhmkorff coil, and a Crookes' tube—and Röntgen. Other Röntgens and Listers we have among us if we but knew it. These are the men who are the world's real illustrious heroes.

It is especially in these days that in America we need such researches, for our tropical possessions, have brought us face to face with new problems which we can only justly meet by the most careful investigations. It is to our credit that several of our medical colleges have already established schools of tropical medicine, which show that the profession, as well as the public, are rising to the level of our responsibilities and duties.

It is also a cheerful sign of the times that at Harvard a School of Comparative Medicine has been established, which will lead to other similar schools in connection with our medical colleges, for the broad study of disease both in man and in the lower animals. All such knowledge should be correlated, and we may well learn from the diseases of animals how to care for man, as thus far we have learned chiefly from the diseases of man how to care for animals. The endowment of this school with the modest sum of $100,000 is an omen of future good. So too, the somewhat similar school at Buffalo bids fair to add immensely to our knowledge and therefore to our ability to heal.

What now has the American public done for the medical school? Let us contrast it with the endowments in theology. Our academic institutions have such an enormous sum-total of endowments that I do not even consider these. Let us, however, compare theology and medicine, remembering that theology is almost wholly a literary study, dealing not with the facts of Nature, requiring no laboratories and no large corps of assistants and therefore conducted at a minimum of cost. In 1898[4] 84 theological schools reported endowments of $18,000,000, and 71 schools do not report this item; 19 out of 151 medical schools report endowments of $1,906,072. Five theological schools have endowments of from $850,000 to $1,369,000 each. Yet in 1899 there were only 8000 students of theology for whom this enormous endowment was provided, as against 24,000 students of medicine. Each theological student had the income of an endowment of $2,250 provided for his aid, each medical student the income from $83. As against 171 endowed chairs of theology there are only 5 in medicine.

I do not grudge a dollar to the theologian, but I plead for his medical brother, that, with a vastly more expensive education he shall have a reasonable provision made for his training.

I have already indicated to some extent the direction which these endowments of medical schools should take. They may be classed in threee categories: 1. The endowment of professorships. By doing this the salary of the professor would be made available for the other wants of the school. The endowment may well take the form of a memorial, either of the generous donor, or, still better, of some distinguished former occupant of such chair whose name would always add luster to it. 2. The endowment of the laboratories which, as I have indicated, are so costly both in their installation and in their yearly expenses. 3. The endowment of post-graduate scholarships and research fellowships, these being intended especially for those who will devote their time to original research. Students can not take much time for original research, their regular studies will absorb all their energies. Research must be done chiefly by young graduates under the direction of stimulating and energetic members of the faculty.

It is not, I trust, too much to hope, if not now, that in the near future the AMERICAN MEDICAL ASSOCIATION will set a fruitful example by giving each year "Scientific Grants in Aid of Research." The first object of the ASSOCIATION must be, necessarily, to place itself on a strong financial basis. It should own its own building, its printing and publishing plant, and, as soon as possible, should have a reserve fund of considerable proportions. Nothing conduces to the stability and conservativeness of any institution like a good bank balance. The British Medical Association has to-day an excess of assets over liabilities of nearly $380,000, chiefly invested in its building at 429 Strand, London. The AMERICAN MEDICAL ASSOCIATION has made a fair start with a surplus of over $27,000 last January, and, with its large, and, let us hope, rapidly increasing membership, it will before long assume a rank second only to the British Medical Association. Last year[5] the Scientific Grants Committee of the British Association allotted £741, or somewhat more than $3,500, for research work, distributed to three research scholarships, the holders of which were paid $750 each a year, and thirty-three grants in aid of research work, varying in amounts from $25 to $100. Among those to whom grants were made occur the well-known names of Beevor, Vaughan Harley, Kanthack, Luff, Manson, Noel Payton, and Risien Russell. I should hope that the AMERICAN MEDICAL ASOCIATION might even now begin by a modest appropriation, say of $500 a year, which should be allotted by the trustees, or by a special committee on scientific grants, after a careful investigation of the merits and the character of the person to whom such grants were made. No grant should exceed $100, or possibly even, at first, $50 in amount. The results of such grants would be not only absolute additions to our knowledge, but the cultivation of a scientific spirit which would permeate the whole profession and elevate its objects and aims.

In pleading for these endowments of medical schools, it is but a plea for a return to the profession of a tithe of what they have given. Two years ago I carefully investigated the value of the services rendered to the poor in the city of Philadelphia by the medical staff of the Jefferson Medical College Hospital alone, and I found that 129 medical men were then attached to the hospital, and their services, calculated on a moderate basis of ordinary fees, I valued at over $500,000 annually. To a profession which gives so freely of that which is most difficult to give, its own life-blood, surely the public for its own protection may give reasonable endowments to its medical schools. It will be returned to the community tenfold in better educated, better trained and more successful doctors. More devoted, self-sacrificing men and women they never can have.

4. U. S. Education Report.

5. Brit. Med. Jour., 1899, ii, p. 219.

CONCLUSIONS REACHED AFTER A STUDY OF TYPHOID FEVER AMONG THE AMERICAN SOLDIERS IN 1898.

ORATION ON STATE MEDICINE BEFORE THE FIFTY-FIRST ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT ATLANTIC CITY, N. J., JUNE 5-8, 1900.

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ANN ARBOR, MICH.

It is well known that typhoid fever prevailed extensively among American soldiers assembled at state and national encampments during the brief war between the United States and Spain in 1898. In August of that year a board, consisting of Major Walter Reed, U. S. A., Major E. O. Shakespeare, U. S. V., and the writer, was appointed at the request of the Surgeon-General of the U. S. Army, for the purpose of ascertaining the causes of the existence and spread of typhoid fever in the national encampments, and of suggesting means of its abatement. In accordance with instructions, this board visited the national encampments and inspected most of the regiments. While doing this, we interviewed medical and line officers, and obtained as far as possible the sanitary and medical history of each regiment. After completing this tour of inspection, we spent about eighteen months in going over the medical records of these commands. In this work we have accumulated a vast amount of information, which we have embodied in our final report to the surgeon-general. Since much of this information may be useful to the profession, and as the report is not likely to be published soon, I have concluded that I can not do better than present some of the more important results reached in this investigation. In doing this, I wish to state that I am responsible for any failure that I may make in these statements, as this paper has not been submitted to my colleagues on the board. It will be necessary for me to condense my remarks in the form of conclusions, stated somewhat dogmatically, and dependent on the full report for further elucidation. These conclusions I will proceed to give:

1. *Every regiment in the United States service in 1898 developed typhoid fever.*—This is true of both volunteer and regular commands. I am aware of the fact that some regiments have claimed freedom from typhoid fever, and it is true that the sick reports of more than one command fail to show any evidence of this disease; but by carefully tracing the sick to hospitals, we have been able to find one or more cases of typhoid fever in every regiment. The claim is made by an assistant-surgeon of one of the Pennsylvania regiments that there was not a case of typhoid fever in his command, but the records of the Philadelphia hospitals show that certain cases sent from this regiment proved to be typhoid fever. It is true that this regiment, which was engaged in guarding powder works in New Jersey and Delaware, had relatively few cases of typhoid fever, but it did not altogether escape this disease. Official statements that certain commands escaped typhoid fever have been made. Gen. H. V. Boynton, chairman of the Chickamauga and Chattanooga National Military Park Commission, in his report to the Secretary of War, under date of Oct. 17, 1899, makes the following statement:

> At the time the camp was abandoned, it is true that there was much sickness, and that a condition approximating panic prevailed with many officers and surgeons. There were large numbers of fever patients in the hospitals. Seven battalions of troops—four colored, under Col. E. L. Huggins, of the Eighth United States Volunteer Infantry, and three white, under Col. L. D. Tyson, of the Sixth United States Volunteer Infantry—were left at the camp. The strictest sanitary measures were at once adopted by these officers, and were also rigorously enforced, both as to the camp sinks, the cooking of food, and the eating of trash, and the drinking of slop. The result was that, notwithstanding they were encamped in the same sections of the park (Chickamauga) where the departing troops had been, not a case of fever developed in either of these forces; nor did a death incident to camp disease occur.

This positive statement from one so high in authority needs careful investigation. Moreover, it will be of special interest to inquire somewhat in detail as to whether or not these regiments, by the practice of strict sanitary precautions, were able to encamp in Chickamauga Park, which at that time was widely contaminated with matter specifically infected with typhoid fever, without developing one or more cases of the disease.

The Sixth U. S. Volunteer Infantry assembled at Knoxville, Tenn., where it was mustered into the service of the United States on July 14, 1898. It remained in this camp until July 31. While at this place it had a most excellent supply of water—that furnished West Knoxville. Fecal matter was deposited in sinks which were fairly well policed, the contents being covered with dirt and lime twice a day. The health of the command seems to have been good, but soon a case of typhoid fever appeared. Very shortly after the regiment had been mustered in, one man, an athlete, who had been traveling about the country, complained of being ill and was granted sick furlough. This proved to be a case of typhoid fever. This command reached Chickamauga Park about 11 p.m., July 31. It rested for the night near the Second Brigade of the Second Division of the Third Army Corps. The next morning it was moved near the water-tower, on ground quite remote from that occupied at the time or previously by any command. On the morning of August 1, eight men reported at sick-call, but none of the cases proved to be serious. I have studied the records of this regiment carefully, and find no evidence of typhoid fever in it after it reached Chickamauga, until August 24, when a private from Company C was sent to the hospital of the First Division of the Third Army Corps. This case was diagnosed "malaria," and the man remained in the hospital only five days when he was discharged on furlough, but at the expiration of his furlough he was unable to return to his regiment. The probability is that this was a case of typhoid fever. On August 27, another case of so-called "malaria" was sent to the same hospital, and was furloughed four days later. This man also was unable to return to duty when his furlough expired. From September 1, until the regiment left Chickamauga, numerous cases of recognized typhoid fever were sent from this command to the Sternberg Hospital. One man, admitted to this hospital on September 1, died September 5, and was probably in the second week of the disease at the time of death. This man was a sergeant and had never failed to appear at sick-call in the morning with the men from his company. He expressed solicitude about himself two days before he was sent to the hospital, or, to be more explicit, on August 29. From August 24 to October 4, the date when this regiment left Chickamauga, 98 cases of protracted fever were sent from this command to Sternberg Hospital: 86 of these were diagnosed as typhoid fever, 11 as malaria, and 1 as dysentery. The man who was admitted to the hospital September 1, and

who died September 5, was the first case of recognized typhoid fever occurring in this regiment after it reached Chickamauga. The appearance of this case caused considerable solicitude, and the regiment again changed its location, and its water-supply. However, as has already been seen, typhoid fever did not abate. On October 4, as has been stated, this regiment left Chickamauga and proceeded to Porto Rico. Typhoid fever continued to develop during the voyage and after reaching the island.

The Eighth U. S. Volunteer Infantry consisted of a regiment of colored troops, recruited largely in Kentucky, and was stationed at Fort Thomas until it went to Chickamauga Park on October 8. In the August report of this command, there is 1 case of recognized typhoid fever. In the September report there are none and only 5 cases diagnosed as malaria, while only one of these was off duty for more than ten days. The October report shows 2 cases of recognized typhoid fever. The initial date of one of these was October 1, before the regiment left Fort Thomas; the initial date of the other was October 25, while the regiment was in Chickamauga Park. The November report shows no cases of recognized typhoid fever; but 2 diagnosed as malaria were of more than three weeks' duration, and 6 of fever, undiagnosed, are reported, and none of these patients had returned to duty up to Dec. 31, 1898.

2. *More than 90 per cent. of the volunteer regiments developed typhoid fever within eght weeks after assembling in the state encampments.*

It is impossible to fix any exact date on which the several regiments assembled at their state encampments. However, as the first call for troops was issued April 20, 1898, it must follow that at the earliest all regiments assembled at state encampments during the last week of that month. Bearing this in mind, our report will show that the great majority of the volunteer regiments developed one or more cases of typhoid fever within eight weeks after assembling at the state encampment.

3. *Most, probably all, of the regular regiments developed typhoid fever within less than eight weeks after going into camp.*

The following table shows the date of going into encampment and of the appearance of first cases of recognized typhoid fever in certain regular regiments:

COMMAND.	Date of going into Encampment.	Date of first case of recognized Typhoid Fever.
Second, U. S. I.....	April 22, 1898.	May 28, 1898.
Fourth, U. S. I.....	April 22, 1898.	May 18, 1898.
Sixth, U. S. I.....	April 22, 1898.	May 19, 1898.
Seventh, U. S. I.....	April 24, 1898.	May 26, 1898.
Thirteenth, U. S. I.....	April 23, 1898.	May 8, 1898.
Sixteenth, U. S. I.....	April 22, 1898.	May 20, 1898.
Twenty-second, U. S. I....	April 22, 1898.	May 29, 1898.
Twenty-fourth, U.S.I. (col.)	April 20, 1898.	May 28, 1898.
Twenty-fifth, U.S.I. (col.)	April 20, 1898.	May 28, 1898.

When war with Spain was proclaimed, the total strength of the standing army of the United States was 27,000 officers and men. These troops were scattered at about 100 military garrisons. All of the soldiers were well housed, and their quarters were, from a sanitary standpoint, in good condition. At each garrison, the water-supply was above suspicion, and the disposal of waste was such as not to endanger the health or the life of the soldiers. There was no epidemic at any post, and the army was reasonably free from infectious diseases except those of venereal origin. The number of cases of typhoid fever among the 27,000 officers and men during the first four months of 1898 was distributed as follows: In January, 9 cases with 1 death; in February, 3 with 1 death; in March, 4 with no deaths; in April, 6 with 1 death. During the last week of April and the first week of May, 1898, the regular regiments were assembled in national encampments and placed under canvas.

4. *Typhoid fever not only appeared in every regiment in the service, but it became epidemic, both in the small encampments of not more than one regiment, and in the larger ones consisting of one or more corps.*

The statement has been made that the epidemics of typhoid fever in our national encampments in 1898 were due to crowding together large numbers of men. The Third North Carolina Volunteer Infantry, at its isolated post at Fort Macon, N. C., developed typhoid fever before it was sent to Knoxville, where it became a part of the Second Division of the Frst Army Corps.

When we reached Knoxville, Tenn., in our round of inspecting the troops, we were informed that the Fourth Tennessee was encamped near that place, where it had been since mobilization, and that it was wholly free from typhoid fever. A personal investigation showed the following facts: This regiment assembled June 28, although it was not mustered into United States service until about the middle of July. On August 12, Ernest Martin, who had not been well for a week preceding this time, was admitted to the regimental hospital. On August 15 he was furloughed, and on September 11 he died at his home in Nashville, Tenn., of typhoid fever. From the date of this first case up to the time of our inspection (Sept. 14, 1898) there had been in this regiment not less than 11 well-marked cases of typhoid fever, although none had been so diagnosed by the regimental surgeon.

The Fifteenth Minnesota, at its regimental encampment at the Fair Grounds at St. Paul, Minn., and the Thirty-fifth Michigan, at Island Lake, Mich., developed epidemics of typhoid fever. Other instances might be cited, but these suffice to show the truth of the statement that the disease became epidemic in small as well as large encampments.

5. *Typhoid fever became epidemic in camps located in the Northern as well as in those located in the Southern States.*

Some medical officers have placed stress on the fact that Northern men were transferred to the Southern States in the summer time, and have attached considerable importance to the influence of non-acclimatization in the production of the epidemics of typhoid fever. In answer to this, we need only call attention to the fact that the Fifteenth Minnesota, Thirty-fifth Michigan and the Two Hundred and Third New York furnished large numbers of cases of typhoid fever, practically all of which developed before they crossed the Mason and Dixon line. There is nothing more certain than that the prevalence of typhoid fever among the troops in 1898 was not due to geographic location.

6. *Typhoid fever is so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembling.*

We have no reliable data concerning the extent to which typhoid fever prevails in this country, but from the number of deaths due to this disease, we can fairly estimate the number of cases. The following figures may give us some idea as to the chance of infected men being found in each volunteer regiment. In making these calculations, we will figure on the number of cases of typhoid fever in New York City. This city is selected

because it is not subject to epidemics of this disease, and in fact, is believed to be unusually free from it. Supposing that typhoid fever is no more deadly there than it is in Hamburg, and there is no reason for believing it is, then 299—the number of deaths from typhoid fever in New York City in 1897—is about 7.5 of the total number of cases of typhoid fever that occurred in that city in the year given. On making this computation, we find that there probably were 3986 cases of typhoid fever in New York City in 1897. It is safe to say that at least four-fifths of the cases of this disease occur in individuals of military age—between 18 and 45. This means that in 1897 there were in New York City 3188 cases of typhoid fever among those inhabitants who were from 18 to 45 years of age. The government census for 1890 gives that city's population at that time as 1,515,301. A police census made, in April, 1895, indicated a population of 1,849,866. I will be liberal in my calculation and suppose that its population in 1897 was 2,000,000. In round numbers, the number of people between 18 and 45 years of age is one-half the total population. On this basis, the number of people of military age in New York City in 1897 may be placed at 1,000,000—this includes both males and females. Had this 1,000,000 people of military age been divided into regiments of 1300 each, they would have furnished 769 commands. We have seen that the number of cases of typhoid fever there among people of military age was probably 3188, and if these had been evenly divided among the regiments of 1300 each, each command would have contained at least four persons who in all probability would develop typhoid fever during the year. I make no claim that the above given figures are accurate. I have presented them simply for the purpose of showing the chances of there being men infected with typhoid fever in every regiment of volunteers. I think that it must be admitted that there is not much difficulty in accounting for the origin of typhoid fever in our national encampments. With this disease as prevalent as it is throughout the country, it is more than probable that in any organization of 1300 men of military age, taken from private life and held together for two months, one or more cases will develop.

7. *Typhoid fever usually appears in military expeditions within eight weeks after assembly.*

The following quotations taken from a paper on "Enteric Fever in Camps," by Surgeon-Captain Davies, assistant professor of hygiene at the English Army Medical School, illustrates the above statement:

In the Galeaka-Gaika War in South Africa, the troops crossed the River Kei in December, 1877, in the hot and dry season. Diarrhea and "simple continued fever" soon became prevalent, but the general health was good. In the middle of January, 1878, heavy rains came on. Several cases of enteric fever occurred toward the end of the month. In February sickness increased, consisting principally of diarrhea, dysentery, and common continued fever. Bowel complaints diminished toward the end of March, but as the cold weather came on, enteric fever, at first mild and insidious, occurred throughout the country; and in May it is reported that no place was free from it.

In the Zulu War, which commenced at the end of December, 1878, fever appeared at the headquarters at Helpmakaar, and at Rorke's Drift, in the middle of February, accompanied by diarrhea and dysentery; the fever was thought to be "bilious remittent," or "enteric," or a mixture of both. Helpmakaar became so unhealthy that the troops had to be moved to Utrecht and Dundee. Epidemics of enteric fever immediately broke out at both of these places.

In the Afghan campaign of 1878-1880, it is noted that cases occurred at almost all the stations occupied by European troops stretching from the Indian frontier to Kabul and Kandahar. Some of these posts had probably never been occupied before, and many of these cases were quite isolated.

In the Egyptian expedition of 1882, there was great prevalence of bowel complaints, from the first landing of the troops in the latter part of July—diarrhea, dysentery and fever. Enteric fever occurred very soon, both at Alexandria and at Ismailia. When the troops arrived at Cairo, the disease increased gradually, but did not reach any great prevalence until October and November. During October, November and December, out of a total of 319 deaths no less than 223 were due to enteric fever.

In the Nile campaign, in 1884-85, a great number of isolated posts were occupied, extending over a large tract of country. Enteric fever occurred at all or nearly all of these posts, most severely at Assuan and Wady Halfa.

During the French operations in Tunis in 1881, the disease was extremely prevalent, about one-fifth of the whole force being attacked. It has been stated that all the columns on the march, and nearly every occupied post were attacked more or less. In some instances bodies of troops suffered from the disease who had never been in contact with other (infected) troops, and who had not occupied any old (infected) encampments.

I have brought in these quotations in order to show that typhoid fever generally appears in military expeditions. Similar experiences are recorded in the history of mining camps in various parts of the world.

8. *The miasmatic theory of the origin of typhoid fever is not supported by our investigations.*

There are still some who believe that typhoid fever is due to a poison or miasma given off from the earth in gaseous form. I would not mention this obsolete theory were it not for the fact that while inspecting the camps we found intelligent medical officers who believed that some intangible local condition inherent in the place was an important factor in the production of the epidemic. There is apparently in man a tendency to believe in the evil genius of locality. He is prone to attribute many of his misfortunes to indefinable conditions surrounding the place in which he has suffered. As I have stated, no fact in our investigations has been brought out more prominently than the demonstration that locality was not responsible for the epidemics. The Fifteenth Minnesota first developed typhoid fever at the fair grounds at St. Paul. There is certainly no evidence that there is any evil climatic influence connected with this place. This command carried the epidemic with it to Fort Snelling, which has long had the reputation of being one of the most healthful army posts in the United States. From Fort Snelling the Fifteenth Minnesota was transferred to the open fields at Camp Meade, where generations of Pennsylvania farmers have passed the average number of years allotted to man without suspecting that their locality was an unhealthy one. However, typhoid fever continued with the regiment from Minnesota, because the men carried the germs of this disease in their bodies, clothing, bedding and tentage. Certainly, any rational being would prefer any of the above-mentioned localities to Port Tampa, Fla., as a place of summer residence, and yet there was not a regiment in the Fourth Army Corps, encamped for so long a time in Florida, that had as many cases of typhoid fever as did the Fifteenth Minnesota.

9. *The pythogenic theory of the origin of typhoid fever is not supported by our investigations.*

Murchison proposed this theory of the origin of typhoid fever. This author makes the following statement: "Typhoid fever may be generated independently of a previous case by fermentation of fecal, and perhaps

other forms, of organic matter." Translated into terms of modern medicine, this theory is founded on the belief that the colon germ may undergo a ripening process by means of which its virulence is so increased and altered that it may be converted into the typhoid bacillus, or at least may become the active agent in the causation of typhoid fever. Many French, English and American army medical officers believe that typhoid fever may originate in this way. Rodet and Roux, of the French army, have stated their belief that outside of the body the colon bacillus acquires "typhigenic" properties. Surgeon-Captain Davies has expressed his belief in this theory, and some of the medical officers in the American army have also given it their adherence. Surgeon Davies gives the following statement of the reasons for his belief in this theory:

> It is well known that "camp diarrhea" is of the commonest occurrence among troops shortly after taking the field in a tropical and subtropical climate. Change of habits, change of food, improper or unsuitable food, bad water, heat and exposure to sun, and chill—these are all obvious factors in its causation; there is nothing in any way specific. Let us consider the sequel as regards the individual, and as regards his surroundings. The individual may in some cases remain in fairly good health and vigor in spite of a continuance of a bowel trouble; other individuals may suffer more, from the exposure, fatigue and weakening effects of the continued flux. The surroundings may possibly be and remain sanitary, the camp clean, the water pure; but in all probability the reverse will be the case, at any rate, in some instances; the water bad, the soil fouled, very likely overcrowding of the camp, with consequent difficulty, if not impossibility, of proper removal or disposal of fecal matter. Under certain conditions of heat and moisture, favorable to the development and multiplication of low forms of vegetable and animal life which is the more likely or reasonable to expect: That diarrhea in weakly and exhausted individuals should remain diarrhea and nothing more; or that with an increase of filth and decomposition, polluting soil, air and water, a development of filth-generated, pythogenic poison, should take place, capable of causing in such weakly persons a fever, with diarrhea, a poisoning of the organism, producing pyrexia and inflammation of certain glands in the alimentary tract, in fact, a specific fever? Is this supposition of the evolution, gradual or rapid according to circumstances, of a disease poison, dependent on *increased* conditions of pollution of soil, air, or water, either separately or all three together, unreasonable or illogical? Would it not, on the contrary, be more unreasonable to suppose that, under such conditions, there could be no evolution at all? These conditions of camp pollution undoubtedly exist, and tend to increase, in many instances; are they to have no effect? Is diarrhea to continue as simple diarrhea, or is evolution to come into action and produce a new disease? New, indeed, only because the causes necessary for its production are just now brought into operation—spontaneous only in the sense that water is of spontaneous origin when from hydrogen and oxygen the electric spark has produced water, where no water was before.

I believe that the results of our investigations controvert this theory conclusively. In the first place, we have been able to show that the specific poison of typhoid fever was introduced into every one of our national encampments, and with the disease as widespread as it is in this country, I believe that we have good reasons for the claim that one or more men already specifically infected with typhoid fever enlisted in nearly every command. There is, therefore, no necessity of resorting to the theory that the colon bacillus may be converted into the typhoid germ. Moreover, all the known facts of experimental bacteriology are at variance with this theory. So far as the supposition that simple diarrhea may develop into typhoid fever is concerned, I may state that in my opinion our investigations conclusively prove that this is not true. The history of typhoid fever in every encampment shows not only that this disease was not evolved from simple diarrhea, but that as a rule the men who had diarrhea did not subsequently develop typhoid fever. This subject will again be considered.

10. *Our investigations confirm the doctrine of the specific origin of typhoid fever.*

As has already been stated, we have been able to trace the introduction of typhoid fever into every one of our national encampments and into the majority of the regiments. In the case of the few commands about which there is some uncertainty as to the men bringing the typhoid infection from their homes, I may state that in all of these there was ample opportunity for the introduction of the specific poison from other commands.

11. *With typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1300 men should be assembled in any section and kept in a camp, the sanitary conditions of which were perfect, one or more cases of typhoid fever would develop.*

I have already stated my reasons for belief in the above given proposition. In such a camp, however, the disease would not become epidemic, and ultimately it should disappear altogether.

12. *Typhoid fever is disseminated by the transference of the excretions of an infected individual to the alimentary canals of others.*

It is more than probable that many individuals may for a while carry and eliminate the specific bacillus of typhoid fever without themselves developing the disease. Later, I will make some statements concerning the probable proportion of men who are immune to this disease. It is now a well-known fact that persons who have recovered from typhoid fever may for a long time continue to carry and excrete the specific poison. It has also been shown that the longevity of the typhoid bacillus, both inside and outside of the body, is much greater than is generally supposed.

13. *Typhoid fever is more likely to become epidemic in camps than in civil life because of the greater difficulty of disposing of the excretions from the human body.*

This proposition is so self-evident that it needs no lengthy argument to support it. The influence of the introduction of sewers into cities in decreasing sickness from this disease is well known to every student of sanitary science. Moreover, since the disease is disseminated by the transference of the excretions of an infected individual to the alimentary canals of others, it must follow that the more thoroughly and completely the excretions are removed from the vicinity of habitations the less will be the danger of infecting the inhabitants. In fact, the whole question of the prevention of typhoid fever in armies is largely one of the disposition of the excretions. Later I will give figures to show that the prevalence of typhoid fever in certain camps was in direct proportion to the thoroughness with which the excreta were removed from the vicinity of the camps.

14. *A man infected with typhoid fever may scatter the infection in every latrine of a regiment before the disease is recognized in himself.*

The elimination of typhoid bacilli from the bowels probably begins soon after infection. If this be true, during the entire period of incubation an individual may be a source of danger to others. Moreover, in most instances of typhoid fever the disease is not recognized during the prodromal stage, and during this time the

excretions may be laden with typhoid bacilli. It must be evident from this that the only way in which typhoid epidemics can be with certainty prevented in armies is by the complete disinfection of the stools of all, both the sick and the well.

15. *Camp pollution was the greatest sanitary sin committed by the troops in 1898.*

In the history of the different regiments given in our report, we have had too frequent opportunity to call attention to the fearful pollution that existed in many camps. We have stated that fecal matter was deposited on the surface about the camps at Chickamauga and at other national encampments. Much of this filth must have been specifically infected with typhoid fever. Sinks were frequently overflowed by heavy rains, and their contents were distributed on the adjoining surface. I can not here dwell on this point, and must refer for particulars to regimental records given in our report.

16. *Some commands were unwisely located.*

While there is no evidence that any of the places selected for national encampments could be called unhealthful, it is true that some of them were not suited for camp sites. It was quite impossible to keep camps in a sanitary condition at the location for a while occupied by one brigade of the Fourth Army Corps near Port Tampa, Fla. On account of the nature of the ground and the surroundings, Palmetto Beach was certainly a very unsuitable location for a permanent camp. Every medical officer in the First Division of the Seventh Army Corps condemned Miami, and this condemnation was approved by officers of both staff and line, who visited this encampment. The men could not be made comfortable at this place. Notwithstanding these facts, there were regiments at Chickamauga that had more cases of typhoid fever than did any of those in the division at Miami, but this is no reason why the troops at the latter place should have been so uncomfortably situated. Some commands were unwisely located, for the simple reason that the soldiers could not be comfortably accommodated at the place selected. There was, however, a much more serious defect in the location of certain commands. Some regiments at Chickamauga, as we have shown in our report, were so located that they received the drainage of other regimental camps. There was certainly no sufficient excuse for this.

17. *In some instances the space allotted the regiments was inadequate.*

This was true of more than one command at Chickamauga. For instance, the One Hundred and Fifty-eighth Indiana was forced to contract its lines to half the regulation distance, and then it was only fifty feet distant from the Sixth Ohio. The sinks of the last-mentioned regiment and the kitchens of the First West Virginia were only twelve or fifteen feet apart. I am forced to conclude from this and numerous other similar examples that there were line officers in the First and Third Army Corps whose efficiency might have been enhanced by some knowledge of camp hygiene.

18. *Many commands were allowed to remain on one site too long.*

There were regiments at Chickamauga that did not move a tent from the time of arrival in May until that of departure late in August.

19. *Requests for change in location made by medical officers were not always granted.*

As an illustration, I will refer to the official records of the Fifth Pennsylvania. This command reached Chickamauga Park on May 20, and was unfortunately located on low ground. Requests for change in location were repeatedly sent in during June and July. The earth became muddy, the camp received the washings from other camps above, the sinks rapidly filled with water and overflowed, and yet requests for change in location were unheeded until August 12, when the regiment was allowed to occupy a new camp two miles to the west and on a higher piece of ground.

20. *Superior line officers can not be held altogether blameless for the unsanitary condition of the camps.*

As we have already seen, some of the regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for change in location were disregarded and regiments were allowed to occupy one site for too long a time. In general, the camps became very filthy. It must therefore be admitted that line officers were to some extent responsible for the condition of the camps under their command. The medical officer can only recommend; the line officer may command. We think it unfortunate that no adequate instruction is given in hygiene in our national military school. It does seem that line officers should at least know enough of this subject to be able to recognize the importance of reasonable requests and recommendations made by medical officers.

21. *Greater authority should be given medical officers in matters relating to the hygiene of camps.*

It is of the greatest importance that more authority be granted medical officers in all matters pertaining to the hygiene of camps. Certain men in the medical corps should be selected to do the duties of sanitary inspector, and these should be chosen on account of recognized ability in this particular line. The sanitary inspector should make his reports in duplicate, one copy of which should be presented to the commander in charge of the troops, while the other should be forwarded to the surgeon-general. When the line officer in command fails to comply with requests made by a medical inspector, he should state in writing the reasons for non-compliance, or at least he should in writing acknowledge the receipt of the recommendation.

22. *It may be stated in a general way that the number of cases of typhoid fever in the different camps varied with the method of disposing of excretions.*

This is well illustrated by the methods of disposing of fecal matter and in the number of cases of typhoid fever in the three divisions of the Seventh Army Corps. The First Division was most uncomfortably located at Miami, Fla., from the last week in June until the second week in August. On the last-mentioned date it was removed to Jacksonville, where it joined the other divisions. During a part of its stay at Miami, and during the entire period of its encampment at Jacksonville, water-carriage was employed for this disposal of fecal matter. In the Second Division the tub system was employed. By this method infected fecal matter was scattered all through the camp. In the Third Division regulation pits were used. The number of cases of typhoid fever was smallest in the First Division, and greatest in the Second Division.

23. *The tub system of disposal of fecal matter as practiced in the Second Division of the Seventh Army Corps is to be condemned.*

Of all the methods for the disposal of fecal matter practiced in the national encampments in 1898, I regard this as the most unsatisfactory.

24. *The regulation pit system is not a satisfactory system of disposing of fecal matter in permanent camps.*

Eespecially is this true in hot weather. It is a very difficult thing to have soldiers appreciate the necessity of keeping fecal matter covered. As I have elsewhere stated, in many camps, orders were issued requiring each man to cover his stool as soon as deposited, but we did not inspect the pits of a regiment in which we did not find exposed fecal matter. Moreover, in the camps in 1898 flies swarmed so numerously that the first droppings of fecal matter were often covered with them before the act of defecation was completed. The pit system may be employed when armies are on the march, and stopping at one place for a few days at most, but even then they are sources of danger, and it is quite impossible to prevent the spread of typhoid fever in camps in which this method of disposing of fecal matter is employed. At Chickamauga it was well-nigh impossible to prepare sinks of proper dimensions, and still more difficult to keep the contents of these sinks properly covered. The clay thrown out in digging the pits hardened in the sun, and when thrown back on the contents had but little absorptive power, and the result was that fecal matter was constantly exposed. In some of the camps about Tampa it was impossible to dig sinks to proper depth on account of the height of the ground water. For these reasons, I am thoroughly convinced that if epidemics of typhoid fever are to be prevented, some other method of disposing of fecal matter in camps occupied for a week or longer must be resorted to.

25. *Our board has recommended that in permanent camps where water-carriage can not be secured, all fecal matter should be disinfected and then carted away from camp.*

For this purpose we have made a special recommendation that galvanized iron troughs containing milk of lime be used for the reception of all fecal matter, and that the contents of these be removed daily by means of the portable odorless excavator. I am aware of the fact that this method of disposing of fecal matter will be attended by increased cost, but I am confident that it will greatly lessen the number of cases of typhoid fever. These troughs, and the method of using them, have been fully described in our report. I believe that there is no question pertaining to army hygiene of greater importance than that relating to the method of disposing of fecal matter. The way in which this is done largely determines the number of cases of typhoid fever that will develop in any command.

26. *Infected water was not an important factor in the spread of typhoid fever in the national encampments in 1898.*

There probably were local water-supplies that became specifically infected with the typhoid-fever bacillus, but infected water was not the great factor in the causation of this disease. It is possible that the piped water at Chickamauga Park became specifically contaminated. Certainly the location of the intake pipe in Chickamauga Creek, so near the junction of that stream with Cave Spring Branch, which drained many of the camps, was not justifiable, and it hardly seems possible that the piped water wholly escaped contamination. However, that even at Chickamauga infected water was not the chief factor in the spread of typhoid fever is shown by the fact that regiments that did not drink this water also became widely infected with the disease, and it is furthermore demonstrated by the fact that the spread of typhoid fever continued after the regiments had been removed to Knoxville, Tenn., and Lexington, Ky., at both of which places the water-supply was above suspicion. It is also probable that some of the local water-supplies at Chickamauga became specifically contaminated. This might have been true of the wells from which the regiments of the Second Division of the First Army Corps for a while drew their supply. The location of the Jay's mill well, for instance, was such as to receive the drainage from typhoid fever infected camps near it, and it is not likely that this water escaped specific contamination. I am also inclined to attribute the greater prevalence of typhoid fever in the Third Army Corps to the fact that the sites covered by the regiments of this corps furnished many wet weather springs, which in all probability were specifically contaminated. That the water was not infected at Jacksonville seems to be beyond question. The supply came from artesian wells more than 1000 feet deep, and was distributed through the camps by means of pipes. In August and September of 1898, there were in round numbers at Jacksonville, 30,000 civilians or inhabitants of the city, and the same number of soldiers in camp near it. Both civilians and soldiers drank water from the same source. There were only a few sporadic cases of typhoid fever in the city at a time when each of the three division hospitals was receiving a score or more of patients with this disease each day. The same condition existed at Knoxville. Here the soldiers obtained their water-supply from the pipes that furnish West Knoxville. We satisfied ourselves, from an inspection of the health officer's records, that there were no cases of typhoid fever among the citizens, and at that time there were hundreds of cases among the soldiers. At Camp Alger, certain local water-supplies probably became contaminated, but there is no evidence that this was generally true. Each regiment obtained its supply from a bored well, and while there was some question about the wisdom of the location of a few of these, the majority were so situated and so constructed that infection seemed well-nigh impossible. The same was true of the water-supply at Camp Meade.

27. *Flies undoubtedly served as carriers of the infection.*

My reason for believing that flies were active in the dissemination of typhoid fever may be stated as follows: *a.* They swarmed over infected fecal matter in the pits and then visited and fed on the food prepared for the soldiers at the mess tents. In some instances where lime had recently been sprinkled over the contents of the pits, flies with their feet whitened with lime were seen walking over the food. *b.* Officers whose mess tents were protected by means of screens suffered proportionately less from typhoid fever than did those whose tents were not so protected. *c.* Typhoid fever gradually disappeared in the fall of 1898 with the approach of cold weather, and the consequent disabling of the fly.

It is possible for the fly to carry the typhoid bacillus in two ways. In the first place, fecal matter containing the typhoid germs may adhere to the fly and be mechanically transported. In the second place, it is possible that the typhoid bacillus may be carried in the digestive organs of the fly and may be deposited with its excrement.

28. *It is more than likely that men transported infected material on their persons or in their clothing, and thus disseminated the disease.*

In some of the commands it was customary to detail men from the line every morning to serve as orderlies

at the hospital. These men went to the hospitals, handled bedpans used by persons sick with typhoid fever, and at night returned to their comrades. The most of them were wholly ignorant of the nature of infection and the methods of disinfection. In fact, at one of the division hospitals we saw orderlies of this kind go from the hospital and partake of their midday lunch without even washing their hands. These men handled not only the food which they ate, but passed articles to their neighbors. It seems to me that a more certain method for the dissemination of infectious disease could hardly have been invented. I have stated that in some of the camps the surface of the ground, especially where there were strips of woods, was frequently dotted with fecal deposits. At the time of our inspection of the Third United States Volunteer Cavalry at Chickamauga it was quite impossible to walk through the woods near this camp without soiling one's feet with fecal matter. Much of this was probably specifically infected, and it is by no means improbable that the infection was carried by the men into their tents, where blankets and tentage became infected.

29. *Personal contact was undoubtedly one of the means by which the infection was spread.*

The truth of this statement will be more evident after an inspection of the charts showing distribution of the disease in different regiments, which we have provided for our report. On making such an inspection one must be impressed with the fact so plainly evident that men who were closely associated developed typhoid fever simultaneously. Men in the same company came down with the disease on or about the same time. This became still more evident when we studied the cases with reference to the tents occupied by the men. Certain tents were badly infected, and the majority of all of their inmates developed the disease; while other tents wholly escaped. There are reasons for believing that this was an important factor in the spread of the disease. Blankets and tentage became soiled with typhoid discharges, and in this way the disease was carried by the command whereever it went.

30. *It is probable that the infection was disseminated to some extent through air in the form of dust.*

The shell roads through the encampment at Jacksonville were ground into the finest dust by the heavy army wagons. The scavenger carts carrying the tubs filled with fecal matter passed along these roads, and their course could often be traced by bits of feces falling from the tubs. Other vehicles ground up the fecal matter and dust together, and the winds disseminated these particles here and there. Men inhaled this dust; it was deposited on their food, and men ate the dust. Having seen these things, I am inclined to the opinion that infected dust was one of the factors in the dissemination of typhoid fever. I am aware of the fact that complete desiccation soon destroys the typhoid germ, but dust is not always completely desiccated.

31. *A command badly infected with typhoid fever does not lose the infection by simply changing location.*

I do not mean to say that it is not advantageous for a regiment badly infected with typhoid fever to change its location. On the other hand, in our history of the Second Division of the First Army Corps, we have shown that such change is of advantage and may be followed by a reduction in the number of cases; but mere change in location is not sufficient to stamp out the disease in a command after it has become widely disseminated. The histories of many regiments show this to be true. The Second Division of the First Army Corps became badly infected with typhoid fever at Chickamauga; later it moved to Knoxville, Tenn., at the latter place the location was an ideal one, the water-supply was above suspicion, the surface was gently rolling and natural drainage good. The soil was deep and pits of proper depth were easily constructed. Soil thrown out in digging pits dried in the sun and became highly absorptive, so that when thrown back on the fecal matter it readily took up the moisture. Notwithstanding all these favorable conditions typhoid fever continued, and instead of showing the slightest abatement increased in prevalence. The regiments that went from Chickamauga to Lexington, Ky., had a similar experience, although it was not so marked in these, probably because they had been more severely afflicted at Chickamauga and a larger proportion of the susceptible material had been used up. The regiments of the First Division of the First Army Corps that went to Porto Rico carried the infection along with them, with but little, if any, abatement. Numerous other equally striking illustrations might be given.

32. *When a command badly infected with typhoid fever changes its location, it carries the specific agents of the disease in the bodies of the men, in their clothing, bedding and tentage.*

This is shown by the fact that when commands changed location, leaving behind all their sick, and when they went to places free from the infection, the disease continued with them.

33. *After a command becomes badly infected with typhoid, change of location, together with thorough disinfection of clothing, bedding and tentage, is necessary.*

Even when disinfection is carried out as here suggested, the command will not altogether lose its typhoid infection, because some of the men will carry the germs of the disease in their bodies. Change of location removes the command from the infected locality; disinfection of clothing, bedding and tentage destroys the infected material deposited on these articles; but the germs that have already been introduced into the bodies of the men are not so easily reached. The utility of disinfection of clothing, bedding, and tentage was demonstrated by Colonel Girard, who carried out this procedure in some of the most seriously infected regiments at Camp Meade with gratifying results.

34. *Even an ocean voyage does not relieve an infected command of its infection.*

This is shown to be the case in the study of various commands that went to Cuba and Porto Rico. The regiments constituting the Fifth Army Corps that went from Tampa to Santiago in June were not widely infected before embarkation, and some of them were on board ship for sixteen days, and yet all developed one or more cases either on the way or soon after reaching Cuba. The regiments that went from Chickamauga to Porto Rico were widely infected before leaving this country and the disease continued after their landing with but little, if any, abatement.

35. *Except in case of most urgent military necessity one command should not be located on a site recently vacated by another.*

This principle holds good even when the vacating regiment is not known to have suffered from any infectious disease. This axiom in military hygiene was frequently violated during the summer of 1898. In many of the state encampments the regiments that responded to the second call were located on sites re-

cently vacated by commands that had proceeded to the national encampments. This was true of the Fifteenth Minnesota, the Thirty-fifth Michigan, and the Two Hundred and Third New York, each of which, as we have already seen, developed a large number of cases of located on ground which had recently been vacated this disease. The Third Illinois at Chickamauga was by the Sixteenth United States Infantry. The regular regiment had occupied this site only eight days, and during this time had reported no sickness, but soon after it reached Tampa it developed 13 cases of acute intestinal catarrah, 3 of diarrhea, and 3 of typhoid fever. When the Second Brigade of the First Division of the First Army Corps reached Chickamauga Park, the site selected for the regimental camp of the Third Illinois occupied a part of that recently vacated by the Sixteenth United States Infantry, while the other regiments of this brigade were placed some distance away. This brigade remained at Chickamauga until July 22, during which time the Third Illinois developed 60 cases of typhoid fever, the Fourth Pennsylvania 26 cases, and the Fourth Ohio 19 cases. Additional instances of this kind have been given in our report.

36. *The fact that a command expects to change its location does not justify neglect of proper policing of the ground occupied.*

The filthy condition of some of the regimental camps at Chickamauga was explained on the ground that each regiment expected to be called to the front in a few days, and therefore neglected camp sanitation. A camp site should be thoroughly policed up to the moment of vacating it. This should be insisted on as a matter of military discipline, and camp commanders should regard proper attention to the sanitation of the sites occupied by their troops as one of their highest duties, and its neglect as a crime.

37. *It is desirable that the soldiers' beds should be raised from the ground.*

In some of the regiments at Camp Alger the tents were never floored. On inspecting these commands in August, we found dust several inches deep in the tents. During the day-time, in fair weather the blankets were taken out, and men, possibly with their feet soiled with infected material, walked around in this dust, and at night threw their blankets down on it and there slept. This was both unsanitary and uncleanly. We admired the enterprise of the men in some regiments who built in their tents a scaffold of poles, covered this with straw, and made their beds on this. I can not but think that sleeping in a dust pile, which is possibly infected with typhoid material, is not wise.

38. *In some of the encampments the tents were too much crowded.*

This was true both of the space allotted the tents and of the number of men occupying each tent. In some instances the tents of the same company were so close together as to leave no space between them, and those of two adjacent companies were crowded together back to back. Inasmuch as none of these commands were in the vicinity of any hostile camp, this overcrowding seems to have been wholly unnecessary. In some of the commands at Chickamauga the tents were not shifted, but stood continuously on the spot where they were pitched in May until the command left late in August.

39. *Medical officers should insist that soldiers remove their outer clothing at night when the exigencies of the situation permit.*

With from twelve to sixteen men in a tent, all sleeping in the clothes worn during the day and possibly with some of them soiled with infected fecal material, the effect on the general health certainly could not have been beneficial, and the possibility of the dissemination of the infection must be admitted. If privates in the ranks would give as much attention to personal cleanliness as officers do, and if they were furnished with quarters in which they could keep themselves clean, typhoid fever and other infectious diseases in armies would be greatly decreased. As I have already stated, our investigations show that tent infection must have been an important factor in the distribution of typhoid fever.

40. *Malaria was not a prevalent disease among the troops that remained in the United States.*

We have shown in our report that blood examinations for the plasmodium of malaria made by competent men at Chickamauga, Knoxville, Camp Meade, and Jacksonville, show that malaria was a rare disease among the troops that remained in the United States. This disease was undoubtedly more common in some of the camps than the blood examinations would indicate, because these were made for the most part on hospital patients and not on those who merely reported to the regimental surgeon, were given quinin, and were returned to duty in a day or two. The malaria that did exist in the national encampments in this country yielded readily to quinin, and the cases that did not yield to this treatment were not malaria.

41. *The continued fever that prevailed among the soldiers in this country in 1898 was typhoid fever.*

There is no evidence that any other continued fever was found among the troops that remained in the United States. One surgeon claims that dengue prevailed in his regiment at Chickamauga. I think it quite impossible for dengue to have prevailed in one regiment, while all other troops of two army corps encamped at the same place escaped this disease. It was claimed by some that the continued fever prevalent at Chickamauga differed from typhoid, and that it was a disease peculiar to the place; it was designated "Chickamauga fever." That the continued fever prevalent in our camps in 1898 was typhoid fever is demonstrated by the following facts: *a.* When the temperature-curve was not vitiated by the use of antipyretics, it was that of typical typhoid fever. *b.* The fever was not broken or arrested by the administration of quinin. *c.* The death-rate was that of typhoid fever. *d.* Whenever a post-mortem examination was made, and the total of these was considerable, the characteristic lesions of typhoid fever were found.

42. *While our investigations show that coincident infection with malaria and typhoid fever may occur, the resulting complex of symptoms does not seem to be sufficiently well defined and uniform to be recognized as a separate disease.*

In our report we have devoted a special chapter to this subject, and I will be compelled to refer those desiring detailed information to this.

43. *About one-fifth of the soldiers in the national encampments in the U. S. in 1898 developed typhoid fever.*

Among 44,803 officers and men in regiments of the First and Third Army Corps, the records of which we have carefully studied, the number of cases of typhoid fever according to our estimate was 9660. This is equivalent to 21.56 per cent. In the Fourth Army Corps the percentage seems to have been somewhat less. However, the records of some of the regiments of this

corps were not well kept, and we can not be so positive concerning the number of cases.

44. *Army surgeons correctly diagnosed a little less than half the cases of typhoid fever.*

The total number of probable cases of typhoid fever among the regiments studied in Chickamauga was 9660. Of these 4068 were diagnosed typhoid fever either by regimental or hospital surgeons. Most of the cases improperly diagnosed were sent to general military hospitals, or to civil hospitals with the diagnosis, "malaria." In 80 out of 85 cases sent from the Fifth Maryland to civil hospitals in Baltimore, the diagnosis was changed from malaria to typhoid fever. Of 98 cases sent from the Eighth New York to hospitals in New York City, all were recognized as typhoid fever by the physicians in the hospitals, while the majority of these had been entered on sick reports under other diagnoses. The failure of regimental surgeons to properly diagnose many cases of typhoid fever is easily explained. Orders required, very properly, that every man sick for forty-eight hours should be sent to the division hospital. It will be seen from this that the cases were not under the observation of the regimental surgeon for a sufficient time for him to make a diagnosis. There is also some excuse for the failure of the surgeons at the division hospitals to recognize all the cases of typhoid fever. Many of the less severe of these cases remained in hospitals for a short time, and were furloughed home, or forwarded to some general hospital. Moreover, we have shown in the body of our report that, in recognizing nearly one-half the cases of typhoid fever, the army surgeon probably did better than the average physician throughout the country does in his private practice.

45. *The percentage of deaths among cases of typhoid fever was about 7.5.*

Of the 9660 cases already mentioned as occurring among certain troops at Chickamauga, 713 died. This gives a death-rate of 7.38 per cent. This corresponds closely with the death-rate for typhoid fever in those places in which most accurate records have been kept. In the city of Hamburg, during the years 1886-87, there were 10,823 cases with a death-rate of 8.5 per cent. Brandt has collected 19,017 cases treated by cold baths with a mortality of 7.8 per cent. Of 2293 cases treated in some of the larger hospitals in this country in 1897, 9.24 per cent. died. Further details concerning the mortality in typhoid fever are given in our report.

46. *When a command is thoroughly saturated with typhoid it is probable that from one-third to one-quarter of the men will be found susceptible to the disease.*

I am inclined to believe, but desire to state it as an opinion, that typhoid fever disappeared in some of the regiments only after all the susceptible material had been exhausted. This was probably true in all regiments which had 400 or more cases.

47. *In military practice typhoid fever is often apparently an intermittent disease.*

This fact is shown especially in the study of the Eighth New York. Please bear in mind that I state that typhoid fever is apparently an intermittent disease. I do not mean that the apparent intermissions are afebrile; I only mean that the men sick with this disease had periods of improvement which were so marked that regimental surgeons often returned the men to duty, probably at the request of the men themselves. We have discussed this very fully in our history of the Eighth New York.

48. *The belief that errors in diet with consequent gastric and intestinal catarrh induced typhoid fever is not supported by our investigations.*

This belief, which was formerly held by many, is founded on false conclusions arising from erroneous conceptions of the etiology of the disease. Moreover, the early symptoms of typhoid fever are often confounded with those of simple gastrointestinal catarrh.

49. *The belief that simple gastrointestinal disturbances predispose to typhoid fever is not supported by our investigations.*

The members of our board began their investigations with the belief, which seems to be quite generally held, that acute diseases of the gastrointestinal tract render the individual more susceptible to subsequent infection with typhoid fever. However, our studies have forced us to come to the following conclusions concerning the relation between typhoid fever and preceding temporary disorders, including those diagnosed as diarrhea, enteritis, gastroenteritis, gastroduodenitis, intestinal catarrh, gastrointestinal catarrh, gastric fever, and simple indigestion: *a.* The temporary gastrointestinal disturbances of May and June had but little if any effect on subsequent infection with typhoid fever. *b.* The temporary gastrointestinal disturbances of July and August, instead of predisposing to typhoid fever, gave a certain degree of immunity against subsequent infection with this disease. In our report we have attempted to give an explanation of this.

50. *More than 80 per cent. of the men who developed typhoid fever had no preceding intestinal disorder.*

In 2763 cases in which this point was especially investigated, 2356 were not preceded by any intestinal disorder.

51. *The deaths from typhoid fever were more than 80 per cent. of the total deaths.*

The percentage of deaths of typhoid fever to total deaths is not so high if we accept the diagnoses given in the official reports.

52. *The shortest period of incubation in typhoid fever is probably something under eight days.*

This statement is founded on data obtained by a study of typhoid fever among the hospital corps, men and women nurses at Chickamauga. The details are given in our report.

53. *One who has lived in a camp in which typhoid fever is prevalent is liable to develop this disease any time within eight weeks after leaving such a camp.*

The particulars bearing on this statement are given in our history of the Fifth Pennsylvania.

SECTION ON PRACTICE OF MEDICINE.

ADDRESS OF THE CHAIRMAN.*

BY GEORGE DOCK, M.D.

ANN ARBOR, MICH.

We meet again for the consideration of a well-filled program. The number of papers is considerably less than last year, but is still so large that, allowing for the usual proportion of authors unavoidably prevented from appearing, our time must be economically used in order to get through. An effort has been made to group papers on allied topics so that the discussion may be directed to the series, and repetition avoided in that way. In most cases the topics for the groups were arranged

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by the officers of the Section. Other set discussions on chosen topics were projected, but for various reasons could not be carried out as planned. The officers of the Section take not a little pride in the large number of abstracts and synopses published in the program. The utility of these in preparing members of the Section for the best appreciation of papers, and in bringing out pertinent comments and criticisms, seems obvious. For the benefit of future progress, attention may be called to the advantage of making the abstracts as short as possible. This can be done better by the author than by the Section officers or the editor of THE JOURNAL. It would seem that about 100 words should be the limit.

The number of papers on our program leads to the question whether it is not advisable to form a new Section, in order to take up part of the work, and interest will naturally be directed to the unofficial Section on Pathology, of whose existence you already know. There are a number of thoughts that may be expressed in this connection. In general, it seems better to have as few sections as possible in an association made up, as this one is, largely of general practitioners. Yet such is the amount of material that specialization is certain to press its claims in various directions. So far as the proposed new one is concerned, there is a doubt in the minds of some as to the scope intended, due to the various meanings given the term "pathology" and also to the activity of the Section officers. If we take away from the existing Sections on special pathology and therapeutics all their papers devoted to pathologic topics, and place these in a group by themselves, we emasculate the former. Perhaps there is no greater need, not only in medicine, but also in surgery, gynecology and various other branches, than the constant repetition of the principles of pathology, the assertion of the anatomic, physiologic and chemical basis of diseases and the cultivation of positive standpoints in these branches. For the specialist in pathology, such a section might doubtless be a source of much interest, but even he might gain something by annual contact with the clinical workers in hospital and general practice, that he would not find in a special section.

On the other hand, a section devoted to experimental pathology might be useful, still more so one in which general pathologic problems might be considered and where, in addition, specimens might be exhibited, methods demonstrated and apparatus shown. So far as the exhibition of anatomic specimens is concerned, it seems to the speaker that these should be selected with special reference to their importance in pathology or to the method of preparation or preservation. With energetic Section officers, such as were wisely selected for this year, the results would be of great value. It might also be useful to limit the source of such specimens each year to the section of country in which the meeting is held. In this way not only would the labor, expense and risk of distant transportation be avoided, but a general cultivation of anatomic work excited, and, combined with a practical exhibition of apparatus, a more rapid diffusion of methods of all kinds set up.

The chairman of a Section in the year completing a century shoud be pardoned if he falls into the mood natural to such an epoch. At the end of this century, nothing could be more agreeable than to recount the great discoveries that have made it, in medicine, more interesting than any that have gone before. But all these things have been told and retold by more eloquent tongues, and there is another operation that is often more useful though not so pleasant—the examination of the past with a view to facing the future with more certain glance. Socrates held that an unexamined life was not worth living. The same thought might be applied to a profession, and although I would not give the impression that, like Socrates, I have a divine command to examine medicine, the chair in which your favor has placed me may be held responsible for any seeming impiety on my part for attempting it.

Not long ago, in talking with a master of one of its most successful technical subdivisions, my friend remarked that medicine was becoming daily more easy. Against the word "easy" I had to protest, though realizing what was meant. So far from growing easier, the art as well as the science of medicine grows daily more difficult. It is more certain, more thorough, more far-seeing and more far-reaching than ever before, but it requires of its votaries more knowledge, more technical dexterity, greater expenditure of time and greater lucidity of judgment than ever before. We have only to point to any one of the commonest diseases to make this clear. Take a case of typhoid or malarial fever, or of pulmonary tuberculosis, and consider the numerous things to be done and to be thought about that twenty years ago were as far from our minds as was Aristotle's treatise on the constitution of Athens.

It is an interesting and to some a discouraging fact that, although medicine has made most remarkable improvements in this century, its influence over the layman seems less than before and waning rapidly. While it is becoming more positive, more candid, more accurate, the grossest delusions flourish. Not only the plausible nostrum-maker, but the palmist, the astrologer and the ridiculous therapeutic claims of a dozen half-crazed brains have their believers by the thousand. Not many years ago a favorite theme of semiscientific poets was the prediction of a rapidly approaching golden age, when the physician, trained in biologic laws, should occupy the place once held by priests and augurs, but wield his authority only for good ends. Failure in the consummation of this ideal need not make us despair of human nature. In a time of rapid advance it must happen that great differences exist between the trained and the untrained. Moreover, this is an age with little respect for authority. Not only now as before, *irrt der Mensch so lang er strebt,* but it is perhaps well for medicine that people no longer look on its real proficients with the faith of the savage in his medicine-man. Healthy skepticism can do us no harm, and we must remember that with all our advances we still have about us some relics of medievalism. The subject, however, is rather one for the psychologist than the physician, and at this time may be passed over for the consideration of one that affects us more directly, and we may venture to raise the question whether we have used to the best advantage the talents given us by this century, and whether we are likely to be prepared as well as possible for the revelations of the next. A few examples may be considered.

In the first decade of our century Corvisart again gave to the world what the preceding century had rejected. His translation of Auenbrugger's invention of percussion, enriched by his own brilliant commentaries, was soon enlarged and controlled by master minds in every country. For half a century this has been a method of undisputed value in the determination of the

existence and extent of a large number of important diseases. In the second decade Laennec opened up a new world with the stethoscope. This has been explored by all the great physicians of the last seventy-five years, in the face of argument and ridicule, and, with percussion, has helped to call attention to the value of inspection and other so-called physical methods of diagnosis, but how often do we see them all entirely neglected or carelessly used. Not only is the routine examination of the body frequently left undone, but even with marked symptoms on the part of the various organs accessible by these methods, either no examination is made, or it is made in a manner that would be ludicrous if the results were not often most serious. A striking example of neglect of physical examination recently came to my notice. One of my assistants found that a man who consulted him had a complete transposition of the viscera. The manipulations excited the patient's interest, and when he was told the state of affairs said he had been examined seven times for life insurance and been treated once for pleurisy, in a large city hospital, without having the condition discovered. In the third decade Bright showed the relation of albuminuria to kidney disease, and in the fifth Henle and others made clear the diagnostic importance of tube-casts. Though the actual value of these two discoveries has often been exaggerated, they are still essential in diagnosis, but how often are they neglected. Perhaps few fail to make use of tests for albumin in cases in which certain diseases are suspected, yet, as a routine measure, they are often omitted. As to casts and also other substances in the urine, such as blood, pus, and pathogenic bacteria, many physicians are as if these things had never been.

It is not difficult to explain the reasons for this state of affairs. One is indolence, but the most important is that the methods have not been acquired at the medical school; perhaps some of them have not even been seen by the helpless student. Even if the methods have been learned, the student often has not the fundamental knowledge that diagnosis means more than the naming of a disease. Satisfied if he recognizes, even vaguely, one clinical picture in a sick man, he fails to retain or acquire a mastery of diagnostic measures. The condition depends in turn partly on the absurdly large number of medical schools in the country. With from six to seven score of these the obtaining of students must be a more important matter than their training. One of the most certain hopes of the new century is that, comparatively early, many of the superfluous schools will become extinct. Along with concentration of labor in the schools and improvement in the previous preparation of students, we can confidently expect a notable change for the better in methods of teaching, for there has probably never been a time when teachers of medicine, as well as undergraduate students, were so critical in regard to methods as now.

Another topic worthy of examination is that relating to the more instrumental part of diagnosis—a thing that has within a short time assumed important proportions, but the various relations of which are often neglected. It is here especially that apparent ease tempts to superficial examination of the sick.

The many manipulations included under the general head of laboratory examinations vary so much in difficulty, in certainty and in weight as evidence that it is only natural that mistakes occur, yet these are so vital that those concerned should be constantly on the alert to guard against them. How difficult it is to measure the importance of each laboratory fact in itself is often illustrated in practice. I have known of a surgeon being told that in a certain case an enlarged spleen was part of a leukemic process, and with the remark that he believed "clinical observation more trustworthy than instrumental diagnosis," he proceeded to open the abdomen. Another time the report on a sputum examination for tubercle bacilli is negative, but now, instead of relying on the clinical examination, too often sufficient, the patient is allowed to go on as if the negative examination had the same value in one case as a positive one in another. How often is it forgotten that laboratory methods must be learned as separately as any other specialty. No one would think that ability to feel alterations in the pelvic organs gives facility in the interpretation of ophthalmoscopic pictures, yet how often is it taken for granted that one who can cultivate tubercle bacilli can, without practice, detect malarial parasites, or that one who can see tube-casts can also be infallible in the microscopic distinction of primary and secondary anemias.

No doubt the unprepared but ambitious laboratory expert is partly responsible for the present state of affairs, but it would seem that the physician who calls on such an expert should select him with as much thought as he would an operating specialist. Often, too, the physician could control the work of the expert, either by asking for the proof or an explanation of the steps followed. Some time ago a bottle of specimens came to me after making the rounds of half a dozen microscopists. All the previous examiners asserted that the specimens were animal parasites, and their appearance to the naked eye—small, black, thread-like bodies, as they were—made this seem probable. A glance was enough to show that in fact they were the well-known vegetable spirals, the cause of error to so many microscopists in the last fifty years. Some comparisons made it practically certain that the tissue came from bananas. Yet this discovery, so easy to control, was ignored by those in charge. By a curious coincidence the patient herself came under my observation many months later, and on hearing my statement about the specimens, admitted an excessive consumption of bananas, the cause of so much trouble.

When the position and limitations of the laboratory worker are more clearly understood, his remuneration will be better regulated than now. In many places he will be part of a hospital staff, in a laboratory equipped for all kinds of work. In others he will have his private laboratory, and in still others, where the field is not so large, he will have the less brilliant, but not less useful and perhaps more interesting position of assistant to a busy practitioner of broad views.

An examination of the status of another great division of our art, that of therapeutics, is also well worth while in the last days of the century. In materia medica, this century, especially in the latter part, has been prodigal if not discerning. The extraordinary activity in the production of new drugs, though it may give us some that far outrank poppy and mandragora, also makes more difficult the judgment so essential to rational practice. So confused are our standards that it is often impossible to distinguish the wares of the professor of chemistry or pharmacology from those of the modern seekers after the philosoper's stone. In addi-

tion to the products of synthetic chemistry we have a new field in the long-unused animal kingdom. Here constant examination is necessary. It is not easy for the busy man to see how the so-called lymph of an alleged goat should not be as potent as thyroid extract. Serum, too, is a word that suggests potentialities of many kinds, though so widely applied that Virchow's jocular definition—"Serum is any fluid that is not precisely urine"—seems peculiarly apt. One hopes that the end is near when discoverers are driven to such names as "hydrogogin" and "anusol," but the possibilities of the prefiex "eu" temper the hope considerably.

No doubt the commercialism of the day is partly responsible for the present state of this branch of medicine, but the medical profession has a heavy load of guilt. I am credibly informed that in a large factory of preparations used only by the profession, thirty clerks are kept busy answering letters from doctors in regard to the treatment of particular cases in practice. These clerks make no pretense to a knowledge of medicine, or even of drugs. They have their trade catalogue, from which they readily secure the desired information. But will this tendency stop with therapeutic problems? Will not diagnostic and pathologic questions also be given the manufacturing pharmacist for solution, and will he be so blind to his own interest as to remain silent? We can gather some idea of this in some recent literature on the important subject of vaccination, a subject strangely neglected in medical schools and scientific laboratories. In this we learn of *vaccinia sine eruptione* as a satisfactory explanation of what would strike a critical observer as a complete failure of the virus. No wonder that "a boy living in the infected district," who performs the operation, is put forth as a witness concerning a matter of which Jenner himself might not be competent to judge.

Therapeutic false prophets will last long into the twentieth century, but the examined, criticised life then, as ever since the days of Hippocrates, will be but little influenced by them. To it, "they come like water and like wind they go."

IMPROVED METHODS AND DETAILS IN THE CARE OF PATIENTS DURING SURGICAL OPERATIONS.

BY FENTON B. TURCK, M.D.
CHICAGO.

Surgery has reached so high a state of perfection in technique, in toilet and in the care of the patient before and during operation, that there would seem to be nothing left for improvement. Notwithstanding our apparently perfect precautions, however, the surgeon occasionally loses cases through septic infection, shock or other causes.

In the case of septic infection, the surgeon is bewildered in the attempt to determine the source of infection. "The operation is successful but the patient dies," sometimes as the result of infection, sometimes from shock, oftentimes from both. The object of this preliminary report is to present a few facts that may indicate some of the subtle causes of infection and shock occurring, though all the usual precautions have been taken. In operating on the abdomen, the skin is found to be a source of infection. Welch and others have clearly shown that bacteria are still found in the skin, even after all the usual preparations have been made. I have made a number of cultures from the skin before and after operations by various surgeons, as well as in cases of my own. The method was to take cultures from the operative area after the usual aseptic preparations of the skin had been made. After the incision cultures were made from the wound and from the peritoneal cavity. The operation completed, cultures were made from the superficial area, the skin, the deeper connective-tissue layer, the peritoneal cavity and the laparotomy sheets and towels. The result of the bacteriologic investigation was positive in each case and confirmed the observations made by others. The detailed results of my bacteriologic work are reserved for a more complete report.

The laparotomy sheets and towels, as they become wet, are capable of transmitting infection from the field to the edge of the wound and peritoneal cavity. The indications are, therefore: 1, to prevent, as far as possible, infection from the skin and contact with the skin, with the hands, instruments, sponges, etc.; 2, to protect the skin from becoming contaminated by pus or visceral contents. To meet these indications I have devised an improved laparotomy sheet made from thin rubber dam which is fitted close to the body and is illustrated by the accompanying cut (Fig. 1).

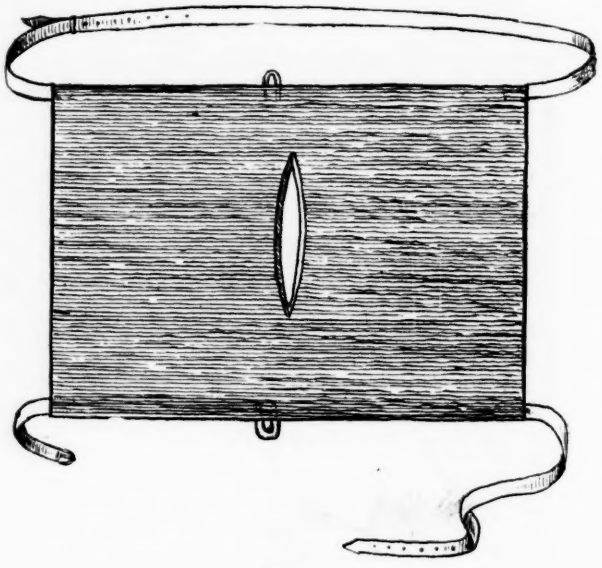

FIGURE 1.

The advantages of this rubber protective are that it not only lessens the danger of infection from the skin, but prevents the latter from becoming contaminated. It also prevents the loss of heat by evaporation from the exposed area of the body, thus lessening danger of shock. The use of the protective does not prohibit the additional use of the linen laparotomy sheet. The former is so arranged as to fit closely and does not interfere with the field of operation.

Some surgeons consider it necessary to protect the edges of the wound by suturing the peritoneum to the skin. This requires considerable time, and as the stitches are usually placed at some distance from each other, the edges are not entirely protected. If the rubber sheet be folded and under the edges of the wound, it may be clamped and held in position after the removal of the hemostatic forceps; the clamps act at the same time as self-retaining retractors, which may be used at any moment. This is shown in Figs. 3 and 3*a*.

Having presented methods for protecting the viscera from infection by the skin, the next important consider-

ation is the protection of the abdominal cavity and the edges of the wound from any possible danger of infection that may arise from opening the viscera, as in operations for gastroenterostomy, enteroanastomosis, cholecystotomy, etc. When a pus cavity exists in the abdomen it is often impossible to avoid peritoneal infection. As an

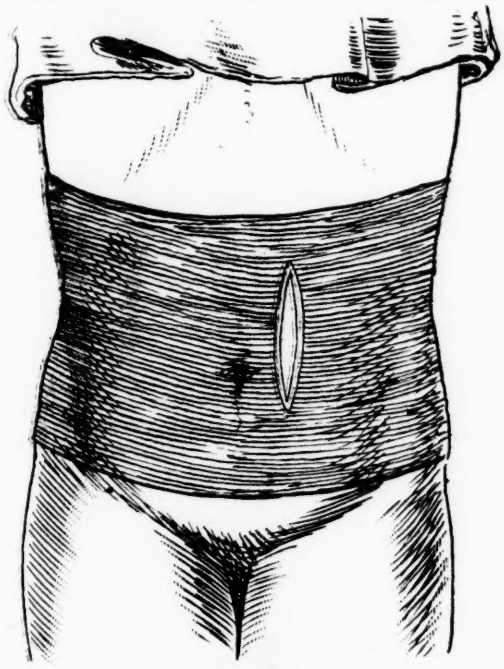

FIGURE 2.

illustration of the method for preventing this infection, the operation of gastroenterostomy may be taken.

A square sheet of rubber dam is made with two small openings which are reinforced by a rubber band forming a collar, as shown in Fig. 4. The openings are about

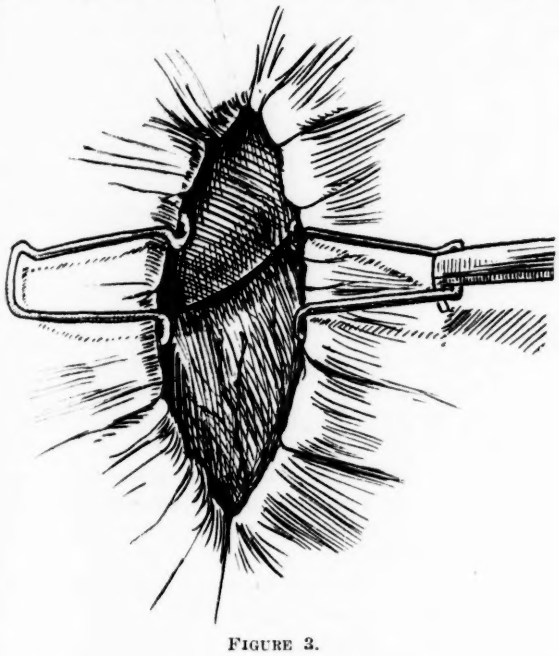

FIGURE 3.

three to six inches apart. The protector or shield is laid over the abdominal wound, and the portion of the stomach to be incised is drawn through one of these small openings, which stretches and hugs closely the protruding viscus. The loop of intestines selected for the anastomosis is drawn through the other opening. As the shield or protector entirely overlaps the edges of the wound, the two portions, stomach and intestines, are entirely excluded from the peritoneal cavity. When the

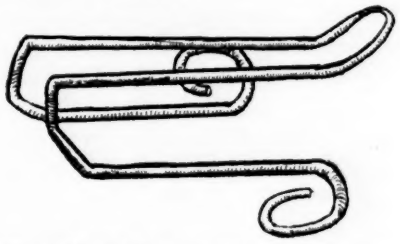

FIG 3a.—The self-retaining retractor and clamp.

viscera are opened for the anastomosis, the contents can not possibly gain access to the cavity, or come in contact with the rest of the viscera. This is well shown in Fig. 5.

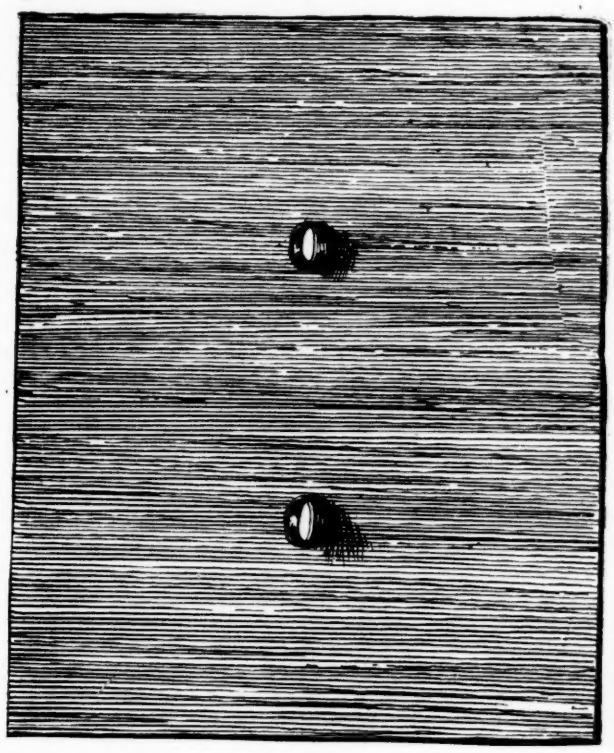

FIGURE 4.

The constriction band around the viscera not only prevents the gastric or intestinal contents from contaminating the wound, but also prevents any considerable

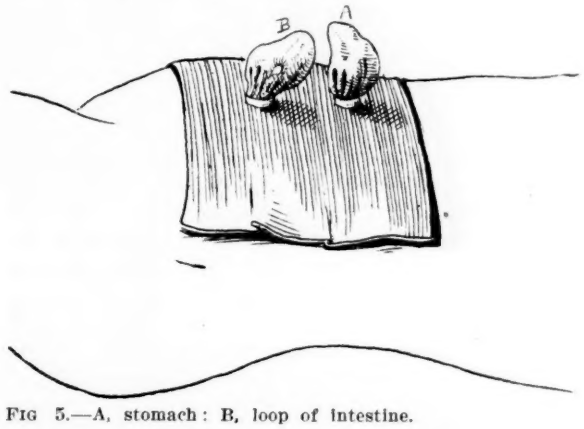

FIG 5.—A, stomach: B, loop of intestine.

escape of the contents. Acting like clamps, but without undue pressure, it at the same time prevents hemorrhage

—a very important point in operating on the stomach. The completion of the anastomosis is shown in Fig. 6.

The operation completed, the entire shield is slit open with scissors, the viscera set free, and replaced in the abdominal cavity. The principle involved in other operations, such as end-to-end anastomosis, is the same. In cholecystotomy, or any operation of like nature, a shield with one opening only is used. In all the various operations where this method is serviceable, gauze may be used in addition to the shield. When gauze is used

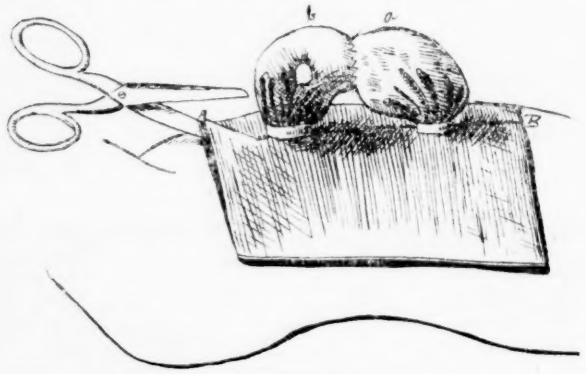

FIGURE 6.

alone in the cavity there is great risk of infecting the viscus, whereas by this method the rubber dam can be kept perfectly clean, at the same time absolutely "walling" off, and excluding the operative area from the rest of the field. Where this special field or protector is not available[1] one may be improvised by using a new rubber dam of medium thickness. A small round hole is punctured at the points desired, and the viscera drawn through as described above.

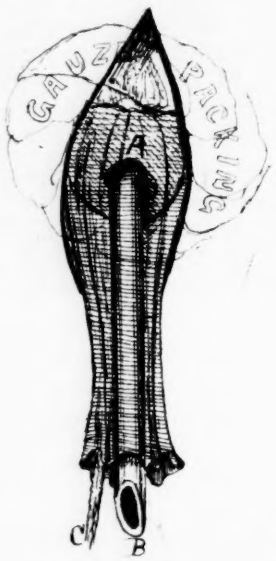

FIGURE 7.

The advantages claimed are: 1. Absolute shutting off of the abdominal cavity from the danger of infection; from the escape of visceral contents and pus; and from any outside influence. 2. Preventing the escape of the visceral contents. 3. Preventing or checking hemorrhage. 4. Protection of the viscera from trauma in handling. As the rubber-covered viscera are grasped and not the viscera directly there is less danger of injury. Furthermore, as the viscera are held in position by this simple method, much tugging and pulling in holding them in the wound is avoided. This is a decided advantage in preventing shock. 5. As the viscera are covered in with rubber, there is no evaporation—no desiccation or loss of heat—which is another important factor in the prevention of shock.

Another valuable protective device, though not so serviceable as the foregoing, is that which I have named the rubber drainage coffer-dam. It consists of a thin rubber cylinder and is used as a protection against leakage. Around the drainage-tube at the point of insertion—as for example in cholecystotomy where drainage of the gall-bladder is desired—the thin flexible cylinder is stretched around the neck of the gall-bladder, and fits snugly to the outer wall, but not with sufficient pressure to shut off circulation. A few stitches hold it in place. The drainage-tube is then inserted within the rubber cylinder and stitched into the gall-bladder in the usual manner. Between the inner drainage-tube and the rubber coffer-dam, a few strands of the suture mate-

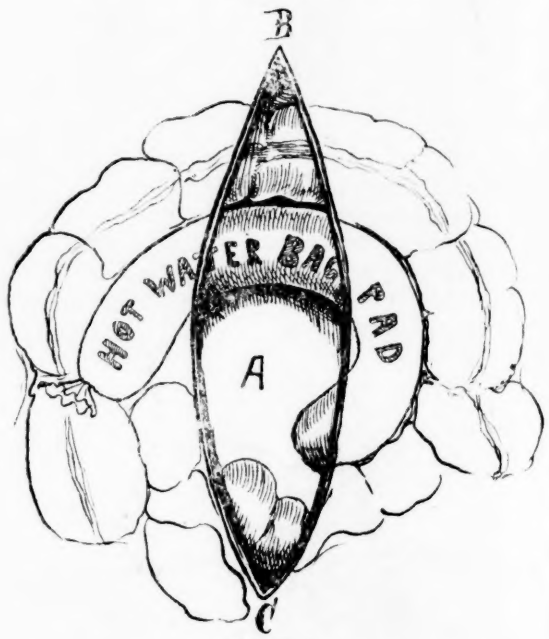

FIGURE 8.

rial are placed for drainage. The folds of the thin wall of the cylinder act also as capillary drainage-tubes. By means of the rubber coffer-dam, we are enabled to more completely shut out the peritoneal cavity. Gauze may now be packed around this coffer-dam in the usual way. This device with some of the various modifications and sizes of thin cylinders may be used in other operations and is shown in Fig. 7.

In abdominal operations, when we have used every precaution against infection, we still have another threatening factor—shock.

In operating on the upper abdominal area, in liver, stomach, or intestinal operations, this factor of shock is a constant menace to the life of the patient, and a great source of anxiety to the surgeon, however perfect his technique may be. In the above described methods I have called attention to the manner of preventing in-

1. Made for me by Miller Rubber Mfg. Co., Akron, Ohio, and sold by dealers.

juries in handling the viscera and methods of preventing desiccation of exposed viscera and loss of heat. The application of heat to the viscera is for the purpose of stimulation and it is usual to apply hot sponges for this purpose. The heat in the wet sponge is soon dissipated and instead of supplying heat the sponge abstracts it from the viscera and surrounding tissues. The sponge can not be changed frequently enough to keep up the temperature. To avoid this, I have placed within a gauze pad a small, thin, rubber, hot-water bag.[2] These are made in different shapes and sizes, adapted for various uses, as shown in Figs. 8*a* and 8*b*.

In some cases the gauze is not needed for absorptive purposes, but simply for holding back the viscera. The hot-water bag alone may then be inserted into the abdominal cavity and a ring may be formed such as shown in Fig 8*b*, and surrounding this a plain gauze sponge may be placed. This acts as a coffer-dam for the operative field.

The rubber bags to be placed within the abdominal cavity may be rendered absolutely sterile, then partially filled with sterile water and heated in the receptacle or

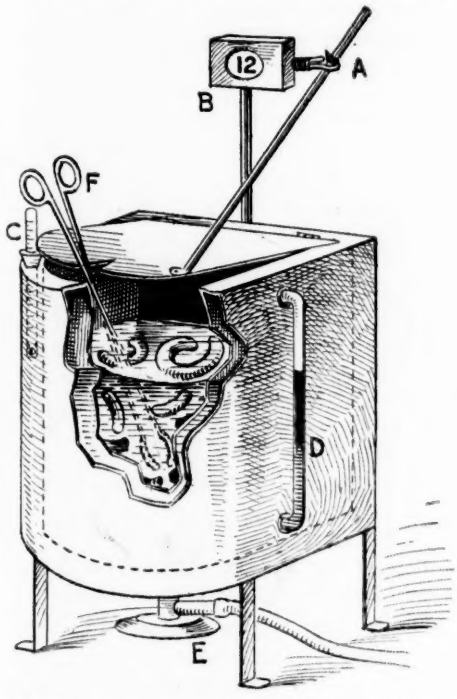

FIG. 9.—A, rod connected with coverlid; B, register; C, thermometer; D, water gauge; E, burner; F, forceps.

bath to the desired temperature. The degree of temperature which I have found most useful is about 48 C.—118.4 F. A thermometer placed in the water-bath regulates the temperature of the sponge pads and bags. (See Fig. 9.)

There must be a distinction made between measures used in the prevention of shock, where this is imminent, and those used where profound shock is present. In all measures for preventing shock the application of heat is one of our most valuable agents.

In previous contributions on this subject[3] I have shown that splanchnic congestion in shock is most readily reduced by the application of heat to the splanchnic area. The methods of application are already quite well recognized, such as the use of intragastric hot-water bags, and those placed within the abdominal cavity. The value of the heat obtained from hot water introduced into the abdominal cavity is well known, also that it is necessary to maintain heat. But there are many objections to water placed directly within the abdominal cavity. The danger of spreading infection is especially important, and it has been claimed that some of the evil results are due to "flooding" the endothelial layers of the peritoneum. With the hot-water rubber pads we possess all the advantages of heat stimulation to prevent shock and none of the above disadvantages. To keep these rubber abdominal pads or sponges at the desired temperature, a receptacle is used containing water and surrounded by a water-jacket. This also keeps count of the sponges used. (See Fig. 9.) Each time the lid is raised it is connected with a small apparatus which rings a bell and registers one, two, and so on. By this automatic registering of the number of sponges taken from the receptacle a perfect check is kept.

The advantages of the hot rubber sponge pads are:

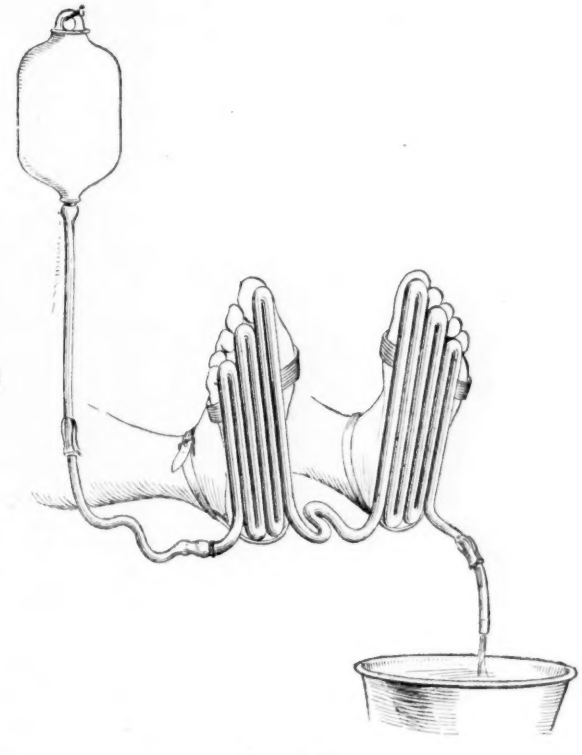

FIGURE 10.

1. The continuous application of heat at the required temperature. 2. These hot-water rubber abdominal pads or bags are soft and yielding like a water-bed. 3. They can be changed at will and can be removed through a small opening. 4. At the end of the operation, before closing the abdominal cavity, a hot-water rubber pad is placed in the cavity under the line of the closure. A small gauze pad is placed over this to catch any blood discharge. This bulges the walls upward sufficiently for the more accurate closing of the abdominal wound. In removal the pad is partially pulled out through the small opening at the end of the wound; the water enters the extracted portion, and the bag is easily withdrawn, far more easily than gauze can be dragged out.

Another method for the prevention of shock is the stimulation of the soles of the feet. The plantar reflexes are already well recognized; the vasomotor effects are not so well understood by the general profession. Stim-

2. Journal of American Medical Association, June 11, 1896; Turck: Surgical Shock, ibid., June 19, 1897.
3. Proc. Am. Gastro-Ent. Ass'n., 1900. Turck: The Splanchnic Circulation and Its Relation to the Stomach and Intestines.

ulation of the terminal nerves results in more prompt and effectual action than when stimulation is applied to the nerve trunk. In experiments on dogs I have observed that heat stimulation applied to the soles of the hind feet produces a marked effect on the splanchnic circulation. When hot water is applied at the temperature of 50 C. it causes a marked contraction of the splanchnic vessels with a rise in blood-pressure. When moderate shock is produced in the dog it is possible to lessen it by the application of heat to the soles of the hind feet. When profound shock is established it requires more active measures, such as the introduction into the stomach of the hot-water bag at a temperature of 55 C.

In order to provide a practical and effectual means of applying heat at a constant temperature, to the soles of the feet during surgical operations, I have had made the hot-water-coil slippers shown in Fig. 10. These slippers have been of valuable service in the prevention of shock in my own experience. I now recommend them to surgeons in all abdominal operations. Even when shock is not imminent the use of heat applied to the soles of the feet is valuable. A good effect is produced on the circulation and better elimination is established.

NEURASTHENIA AND THE REST CURE.

BY FREDERICK A. McGREW, M.D.

DAVIS, ILL.

The use of the rest cure as a method of treatment is rapidly increasing. "Retreats," "rest-homes," etc., are springing up in the neighborhood of cities in numbers almost rivaling the hospitals. In growing numbers patients with nervous complaints present themselves with a history of having "already taken the rest cure." Some of these have done so under professional advisement; others at their own discretion, or at the solicitation of friends. Some have been benefited, for without doubt it is a valuable resource in certain neurasthenic states. Some have escaped with no unpleasant effect other than an irksome sequestration; while others have returned with either a waning confidence in the judgment of their physicians, or a firmly fixed belief that their ailments are beyond the comprehension and reach of ordinary medical skill.

Considering the ill-defined scope of the term "neurasthenia," and the inexactness with which text-book and journal writers prescribe the rest cure for its treatment, it is not surprising that there should be many "cut-and-dried" rest-cure methods. Unless we desire this useful measure to come into disrepute, there must be a more definite knowledge of its proper use and limitations. And this means, first of all, the substitution of a working scientific basis in place of the prevailing haphazard fashion of disposing of troublesome neurasthenia patients.

From my observation of these cases in private practice, and during a service on the resident staff of the Alma Sanitarium, where the study of neurasthenia and its treatment is simplified by the number of cases for comparison, I have come to classify them under three heads, viz.: 1. Developmental neurasthenia. 2. Overstimulation neurasthenia. 3. Developmental plus overstimulation neurasthenia.

A long discussion of the symptomatology of each of these classes is foreign to the object of this paper. It will suffice for our present purpose to indicate the distinguishing features of the two primary classes, as the third class partakes, in varying degrees, of the qualities of the other two.

Neurasthenia, whether due to abnormal development or over-stimulation, exhibits itself symptomatically in fatigue, especially that of brain and muscle. We rely on the history and the symptoms associated with fatigue in determining the class to which a given case belongs, and, as will appear, the course to be pursued in the treatment.

DEVELOPMENTAL NEURASTHENIA.

There are some individuals in whose lives a nerve asthenia is an evident and prevailing factor from the cradle to the grave. Most of them are the offspring of degenerate parents and the neurasthenia is inherited. Occasionally individuals are born with a constitutional nerve weakness which can be traced to no taint in the immediate or remote ancestry, and then it is due to some adverse influence during fetal life; some disorder of nutrition during the developmental period; some accident of labor; or perhaps, unhealthy environment and habits during the formative years of childhood. Neurasthenia due to abnormal development usually manifests itself at an early age, but is either disregarded by the guardians of the child, or they trust to time for a cure. Instability and imperfect balance characterize the activity of the brain and cord in these nervous children, who commonly combine an inability to sustain prolonged exertion with an unusual cleverness of thought and action.

The developmental neurasthenic who eventually comes under professional care is usually a woman of remarkably healthy appearance, who complains most of a chronic fatigue. Her other symptoms are various, indefinite, and legion. Many of them are not incompatible with health, many more are exaggerations of normal physiologic functions, but she readily discloses the fact that they are nearly, if not quite, all associated with exertion, and consequently with the fatigue which follows it. She appears well nourished, but her flabby muscles, weak heart, insufficient respiration, and languid air tell us more plainly than words, that under the superficial accumulation of unoxidized fat there are nerves and muscles, a heart, stomach, and other organs which years of indolence have made inactive.

It is quite evident that what such a patient needs is not rest, but *exercise*—such exercise as shall tend to harmoniously develop and strengthen every part of the physical organization. Much care needs to be used in inaugurating such a course of physical training, because self-confidence is at low tide, habits of mind and body are slow to yield, and a failure of persistent effort is not only easy but wofully discouraging. It is seldom possible to bring such patients sufficiently under the directing and moral influence of physician and nurse in their own homes, but oftentimes intelligent treatment in the routine course of an institution will bring about a comfortable degree of resistance to fatigue, and such an amelioration of the symptoms as amounts almost to a cure. The change of diet and surroundings, and the carefully graduated physical culture must be combined with stimulating and eliminative hydrotherapeutic measures and massage. And it may not be out of place to remark, that these patients should have the judicious sympathy of their attendants, and a ready attention to their petty complaints, that their coöperation and confidence may be secured, for without these latter it is needless to attempt a cure.

OVERSTIMULATION NEURASTHENIA.

In this class belongs the individuals born with nervous strength equal to their general organic hardihood, but whose baneful habits of life end finally in the exhaustion of their inherited nervous vitality. Habitual overstimulation is the physiologic expression of the cause. In contrast to the vast majority of the neurasthenias of development, which are inherited, those which result from overstimulation are all acquired.

Usually they are men in the prime of life, so far as years are concerned; business men worried by their affairs, troubled by sleepless nights and hurried days, until the brain fags and the nerves are "on edge." Equal strife for wealth and position, equal emergencies in business, responsibilities, exhausting labors, etc., do not exhaust equally the nervous vitality of different men, for the pace that kills the common horse only strengthens the thoroughbred.

To this class also belong the overworked and underfed student, the society "bud" who rests little from the excitement of her first seasons, the minister of the gospel who assumes too much work and responsibility, and all of that large element of American men and women who inherit nerve strength sufficient for the places in life to which they are born but insufficient for the strain which the circumstances of a more ambitious career throw on them. Any endeavor will sap the nervous force which drives the blood too fast and too long through the brain, exhausts its energy, gives it insufficient time for relaxation and repair, and takes from the remaining organs of the body the blood they need for removing the waste matter and restoring the wearing cells. Those who acquire neurasthenia usually suffer from indigestion and all the evils attending malnutrition and defective elimination.

When body and brain finally refuse to respond longer to stimulation, they strike, and "nervous prostration" is the result. We then have the lamentable spectacle of a "nerveless," melancholy, dyspeptic man with no confidence in himself and no abiding faith in others, tremulous, hesitating, incredulous, often suicidal. He is afflicted with insomnia, morbid fears, nervous chills, seminal emissions, flatulency, constipation, pain through the loins and back, weariness, and general debility. Digestion is deranged, malassimilation and malnutrition supervene, and a consequent loss in weight adds to the depression of his mind.

Evidently what such an individual needs is *rest,* as complete as it is possible to have, food for his wasted tissues and an opportunity for them to be restored. The rest cure is the treatment par excellence for the neurasthenia of habitual overstimulation.

In addition to complete rest and feeding, general massage, combined with passive movements; special abdominal massage; hot fomentations along the spine and over the stomach and liver; saline spongings, and general faradism are measures promoting elimination of fatigue and waste products and increasing the general muscular and arterial tone. This supplementary treatment is all sedative and nutritive, and should be given in the quietness and subdued light of the rest chamber, by a nurse adapted by disposition and training to care for rest-cure patients.

Some degree of gastric dyspepsia accompanies the neurasthenia of overstimulation. It exists in the form of a neurosis, and consequently presents as varying aspects as does the neurasthenia itself. An analysis of the stomach contents after a test-meal to-day may show more or less hyperacidity, while a repetition tomorrow may show a subacidity or even an anacidity. The rest treatment of the neurasthenia benefits the gastric neurosis, and the recovery of the latter precedes or keeps pace with the former. Nitrohydrochloric acid and nux vomica should be administered.

Besides the psychic causes already enumerated, neurasthenia may be acquired in consequence of the derangement or misuse of the organs. Gastric hyperacidity and abuses connected with the sexual affections may be mentioned as especially frequent forerunners of the disease. The former, due to habitual gluttony, causes undue stimulation of the stomach to excessive secretion, and results eventually in gastric fermentation, starch indigestion, intestinal dyspepsia, and ptomain poisoning. Gorging, toxemia, increased acidity of the blood, and gastric irritability find expression in "nervousness," "fidgets," insomnia, "blues," lassitude alternating with periods of intense energy, and all the other symptoms of uricacidemia. The attack of so-called "nervous prostration" may finally come precipitately. Inability to control the hand in writing, or to concentrate the mental faculties to the business in hand, a wavering disposition, a lapsing memory, take the place of the energy, firmness, power of prolonged application, and general high-pressure activity that previously characterized the individual.

Gastric hyperacidity and the neurasthenia which follows it are benefited by the rest cure. The diet in these cases requires careful management, for most patients will need a dry one, restricted in amount, and with little residue, until the habit of prodigious stimulation under which the stomach has been accustomed to act, is broken up. Loss in weight is the rule, and a long course is often necessary to re-establish the organic functions on a healthy basis. Liberal draughts of mild saline waters are exceedingly beneficial in promoting nutrition and the elimination of the toxins from the body. Colonic flushings, to counteract the constipation and clear the large bowel, will be found valuable. They are stimulating to the circulation and sedative to the nervous system. But of all the adjuvant measures of utility in cases of neurasthenia accompanied by hyperacidity, the best one is gastric lavage, which should be given twice each week, at regular intervals, an hour before taking food. After the patient has emerged from the rest-cure chamber a rest of half an hour in recumbent posture should be strictly enjoined, and the stomach washings should be continued until the patient has recovered, though they may be diminished in frequency during the last weeks of convalescence. In the after-treatment only very moderate exercise should be taken and that not immediately after meals. Indeed, rest in bed for half an hour should be the rule after the noon meal until recovery is complete. This course differs from the method adopted for overstimulation neurasthenia from psychic causes, for there abundant exercise in the open air is enjoined, and the cultivation of athletic pursuits and calisthenic exercises advised.

There is a class of cases, common among women, in which neurasthenia seems to be closely connected with the sexual affections. In the psychic cases hitherto mentioned the intellectual faculties have played the greater part, but it is the emotional faculties which overreach the capacity of the individual's endurance. Psycho-sexual emotions are serious and frequent offenders. Excessive indulgence, sexual uncongeniality, and a trifling with various methods of preventing conception

are probable causes of emotional overstrain, with nervous prostration as a grave consequence. Unrequited love, love-longing, conjugal infelicity, and diseases disqualifying for sexual pleasure and gratification, have each their quota in the ranks of this class.

The rest cure, as outlined above under the treatment of overstimulation neurasthenia, meets every demand here, and recovery is likely to take place promptly. In cases connected with abuses of sexual intercourse, unless the physician assume the unwelcome task of teaching husband and wife the physiology of the sexual act, and it be then indulged in with moderation and to the mutual pleasure and gratification of both, relapses are likely to occur. Regarding the other conditions mentioned, little need be said, but any organic disease of the sexual organs, bladder, rectum, etc., should at once receive its appropriate treatment.

DEVELOPMENTAL PLUS OVERSTIMULATION NEURASTHENIA.

Either the developmental or the overstimulation element may be the chief factor in a neurasthenia in which both are concerned. The degree of nerve strain necessary to precipitate an attack of neurasthenia is in inverse ratio to the degree of developmental weakness. Just how much is due to insufficient nervous vitality and how much to the abuse of what vitality there is in any given case is a delicate matter to determine, and for the purpose of treatment an approximate estimate must be made.

In those cases in which loss of weight, dyspepsia, headache, neuralgia and other symptoms indicating a failure of nutrition accompany a history of recent nervous overstrain, the rest cure is the best thing, preliminary to subsequent treatment to develop nerve vitality as indicated above under the first class. On the other hand, with patients who have succumbed to a slight overtaxation of the nervous system, the overstimulation element may be disregarded altogether, and treatment for the development of nerve force instituted at once, and it is with this class that a sea voyage or a sojourn among the mountains proves most beneficial.

INTRALARYNGEAL INSUFFLATION.

FOR THE RELIEF OF ACUTE SURGICAL PNEUMOTHORAX. ITS HISTORY AND METHODS WITH A DESCRIPTION OF THE LATEST DEVICES FOR THIS PURPOSE.

BY RUDOLPH MATAS, M.D.
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(Concluded from page 1375.)

HISTORY OF PULMONARY INSUFFLATION AS APPLIED TO THE SURGERY OF THE CHEST.

It is difficult, if not impossible, to ascertain to whom belongs the credit of first suggesting the value of pulmonary insufflation in thoracic surgery. It is probable that the same thought occurred to many observers who were interested in the same problem simultaneously. As indicated by the preceding review of the evidence, it is plain that no originality can be claimed for the procedure itself, or even for the appliances used, since we see that the fundamental ideas have been thoroughly exhausted by a large number of investigators who during the eighteenth century developed the practice by successive contributions until it reached its maturity at the present time. In its surgical phases the thought of inflating the lungs to counteract the evil effects of pneumothorax must have forced itself upon the attention of many of the practical surgeons of the modern period—the period of the Listerian renaissance—in which the feverish activity of the enterprising operators in quest of new fields of splanchnic conquest found itself blocked by this apparently insurmountable barrier in the thorax. They must have realized that while all the other conditions for success were ripe for the invasion of the chest this one great desideratum was still lacking.

In trying to discover when and where this suggestion originated, or where it was at least first put on record, we find that most of the references cluster about the period embraced from 1872 to the present time. Pean, the distinguished Parisian surgeon, is reported to have appreciated the importance of increasing the intrabronchial pressure in intrathoracic operations. In one instance in which he resected a portion of the sternum for the removal of a mediastinal growth he operated in a chamber much like a diving-bell, within which a pressure of two atmospheres was maintained. The operation presented great difficulties, and the patient died on the second day. I can find no reference to this case, but I quote it from H. Milton, of Cairo. (*The Lancet*, London, March 27, 1897.) Délorme, in a discussion at the Société de Chirurgie, Feb. 16, 1897, referred to M. Lambotte, a Belgian surgeon, as having advised, some time before him, the artificial inflation of the lung in surgical conditions. Délorme himself said that the need of an appliance to inflate the lungs had occurred to him when he first performed his operation of decortication and liberation of the imprisoned lung in chronic empyema. But the surprising manner in which the lung expanded spontaneously and filled the pleural cavity after it had been released from its confining shell of exudates, in his first case, and in another, operated upon by Lardy, of Constantinople, showed him that the expansion of the lung could be effected without the help of such appliances and by the efforts of nature alone. He believed that a sufficient increase in the intrabronchial pressure is obtained by the closure of the glottis in the paroxysms of cough that occur in the course of the operation. But that nature's unaided efforts are uncertain and can not be trusted under such circumstances is proved by other operators who, in more than twenty-seven instances of the same kind, have adopted Délorme's procedure. Cases of this class in which the lung is forced into activity after a long period of inaction, and when ample opportunity is given to the organism to accommodate itself to a crippled respiratory function, are not apposite to the acute conditions here considered, as in these the desideratum is to obtain a certain means of preventing acute pneumothorax in surgical operations. But it is to Tuffier and Quénu, with their associates, Hallion and Longuet, and to Doyen and to H. Milton, that we owe the chief debt of recognition for their scientific demonstration of the value of artificial inflation of the lung through the larynx for the prevention and relief of surgical pneumothorax. Tuffier and Hallion reported their first experiments to the Société de Biologie, November 21, 1896, and Tuffier read a paper on the same subject in the Société de Chirurgie in February, 1897 (*Bulletin et Mem. Société de Chirurgie*, February and March, 1897). The great merit of these observers is that they obtained the desired result by insufflating the lung through an *intralaryngeal* tube, and that they secured the necessary data by which to regulate the intrabronchial pressure with scientific accuracy.

*Read at the meeting of the Southern Surgical and Gynecological Association, held at New Orleans, November, 1899.

Coincidently with Tuffier and Hallion's experiments with intubation, Quénu and Longuet undertook an extensive series of researches chiefly with the view of ascertaining the best means of securing pleural adhesions. Realizing all the difficulties which attended this procedure whenever it was attempted after collapse of the lung had taken place, they independently began to experiment with insufflation of the lungs by means of a cylinder of compressed air connected to a canula tied to the trachea. They also tried the simpler plan of making the animal breathe in an atmosphere of compressed air by enclosing the head in an apparatus somewhat like a diver's suit. Notwithstanding the manifest imperfections of their methods, as compared with those of Tuffier and Hallion, they convinced themselves of the enormous advantages of any procedure that will force the lung to remain in contact with the chest wall. They also observed the facility and safety with which the lung can be explored; and, in addition, the tendency to spontaneous hemostasis displayed by the lung when it becomes herniated in the parietal wound under these conditions. In conclusion, they state their conviction that it is in this direction that further efforts must be made if the surgery of the chest is to make further advances. Following closely on the studies made in France, Mr. H. Milton, of the Medical School of Cairo, Egypt, published an article on mediastinal surgery in *The Lancet*, London, March 27, 1897, pp. 1872-75, in which he describes an original procedure for the free exploration of the anterior mediastinal organs. He demonstrated in this communication not only that the mediastinal contents are accessible to the surgeon, but that, by tracheal insufflation with a bellows communicating in the trachea through a canula, the dangers of surgical pneumothorax could be overcome. This operation, called by him "the median normal thoracic incision," consists in a long incision which extends from the cricoid cartilage to the xiphoid appendix in the median line. He saws the sternum in half, and each half is forcibly retracted, leaving an open space between the bones four or five centimeters broad, which permits easy exposure and exploration of the trachea, the vessels at the root of the heart, innominate artery and veins, pericardium, bronchi, lungs and pleura. He first tried his procedure on a goat. In the course of the operation the pleura was torn, and fatal pulmonary collapse would have followed had he not resorted to direct insufflation through the tracheal canula, thus immediately distending the lungs and maintaining artificial respiration. He then closed the pleural rent, and the animal recovered without signs of very serious disturbance. Satisfied with this result, he operated on an Egyptian fellah, who had tuberculosis of the sternum and mediastinal glands. The patient recovered. He demonstrated by this case that even after the total suppression of costal respiration, which must follow the excision of the sternum, the diaphragm is quite sufficient for the needs of pulmonary respiration. Milton's merit consists not only in demonstrating the technical practicability of opening the anterior mediastinum as a route to surgical intervention in the human subject, but in the fact that he was one of the first, if not the first, to operate on a human patient with a thorough knowledge and appreciation of the value of insufflation in preventing the accidents of pneumothorax.

The experimental work done in France by Tuffier and Quénu was limited to dogs and other animals, and was done with imperfect instruments, but the practical, ever-ready mechanical genius of Dr. Doyen, of Rheims, now of Paris, promptly grasped the possibilities of the method, and we now owe to him the first finished model of an intubating and insufflating apparatus for the systematic application of this treatment as a preventive of pneumothorax.

This apparatus was first described in his admirable treatise, "Technique Chirurgicale," pp. 129-133, which was published in 1897, and subsequently in a short article, "La Chirurgie du poumon," which appeared in the *Revue de Therapeutique Medico-Chirurgicale*, Jan. 15, 1898, Vol. xlv. We presume that his invention was the result of independent studies on the subject, as he does not mention the researches of his contemporaries in his work. His apparatus consists in a set of intubation canulas which fit into the glottis and are introduced by a special forceps.

These tubes have a close resemblance to the O'Dwyer tubes for intubation in diphtheria (he does not mention O'Dwyer, however), and are connected with a hand-bellows of his own device, which may be used either as an insufflator or an aspirator. The bellows is a double chamber which automatically injects and aspirates when closed or opened, by means of the vertical movements of the handles. One of the chambers receives air or oxygen, and the other the expired or aspirated air from the patient. It is not easy to describe the mechanical details, but the accompanying figure will give a clear idea of its appearance.

From all this we see that Tuffier and Hallion, Quénu, Longuet, Doyen and Milton were working at the same problem at about the same time; that is, in the course of three years they all arrived at the same conclusions independently of each other.

My personal experience in thoracic cases and the evidence I had gathered in the course of animal experimentation had long ago impressed me with the importance of acute pneumothorax as one of the most formidable bars to the successful issue of intrathoracic operations, and kept me alert for all practical suggestions to counteract it. But it was not until 1897, when I read an account of Tuffier and Hallion's experiments as reported to the Société de Biologie, November 21, 1896, that I realized that thoracic surgery was on the eve of a revolutionary innovation.

I was particularly impressed with the experiments on a dog in whose larynx Tuffier inserted through the mouth a long copper tube attached to a bellows. Artificial respiration being thus established, the pleura was freely incised through an intercostal space, and the edges of the wound were kept apart to allow air to enter freely. The pleural cavity was then illuminated with a small incandescent lamp, and it then became an easy matter to perform operations on the esophagus and pneumogastric nerve, etc., without interfering with the respiration. This and other dogs similarly treated survived several months without suffering serious disturbances. About this time I received a copy of the medical and surgical reports of the Presbyterian Hospital of New York for 1896, which contained a brief but excellent article on the use of the Fell-O'Dwyer apparatus for the treatment of opium narcosis in other non-surgical conditions in which prolonged artificial respiration was necessary to overcome the failure of the respiration. (See Fig. 5.) The reading of this article, together with the repeated demonstration of its unfailing and almost marvelous efficiency in similar cases, at the hands of our colleague, Dr. J. D. Bloom, at the Charity Hospital, immediately suggested to my mind a solution

of the difficult problem that had so long interested me. The suggestion grew upon me, but I had no favorable opportunity in which to try the apparatus. Still, I felt so confident in its reliability and future importance in advancing the interests of intrathoracic surgery that I made pulmonary insufflation with the Fell-O'Dwyer apparatus one of the main topics of my address as chairman of the section on surgery at the meeting of the Louisiana State Medical Society, held May 10, 1898.

The suggestions then made fortunately fell on fertile soil, and I am gratified at the thought that their correctness should have been so brilliantly demonstrated by my colleague, Dr. Parham, whose interesting and brilliant case of resection of the chest walls for sarcoma served as a basis for the exhaustive and learned monograph which he contributed last year with so much credit to himself and to the proceedings of this Association.[1]

FIG. 5.

The original Fell-O'Dwyer apparatus as used in the Presbyterian Hospital of New York. (From "Medical and Surgical Reports of the Presbyterian Hospital," for 1896. See article by Dr. W. P. Northrup, p. 132.)

THE TECHNIQUE OF PULMONARY INSUFFLATION AS APPLIED IN THORACIC SURGERY.

The history of artificial respiration by insufflating the lung through an intraglottic canula would scarcely be complete without some reference to the technique of its application in the most recent phase of its development—thoracic surgery. Fortunately this is elementary in its simplicity, and needs but little experience for its successful application in practice. All that is required is: 1. A properly shaped tube which will fit in the larynx while it is steadily held in place by the hand of the operator. 2. A tubular attachment leading to a bellows which will furnish the requisite pneumatic power to distend the lungs. As stated by O'Dwyer in his commentary upon the original Fell apparatus, all that is required is to get air into the lungs and give it sufficient room to expand and time to escape; the power generated and stored up in overcoming the resistance to inspiration being amply sufficient to carry on expiration. This is precisely what Chaussier, Depaul, Marc, Gairal, Ribemont and a host of others practically ascertained long ago. Since no mechanical assistance is required for expiration, all complex pumps and bellows which alternately inflate and aspirate the lungs are superfluous and, if anything, disadvantageous. It is only in certain conditions that an occasional sustained aspiration may be serviceable in facilitating the expulsion of mucus, water or foreign bodies that may be present in the trachea, but these conditions are rare since the strong expiratory efforts which follow a forced inspiration usually accomplish all that is required without artificial asistance. No instrument of percision is needed in practice to measure the exact amount of air pressure that is required to distend the lungs. All that is required in practice is to observe the effect of the insufflation on the patient himself: the elevation of the ribs, filling of the intercostal spaces and bulging of the epigastrium. These tell us immediately when insufflation is doing its work. The depression of the ribs, sinking of the epigastrium and hollowing of the intercostal spaces tell us exactly when and to what extent expiration has occurred. It is only important that the apparatus should be provided with a bellows or an air-pump large enough to insufflate the amount of air that is required to fill up the lungs with one continuous movement. It is also important that the intralaryngeal canula should be large, for the free and unobstructed expulsion of the expired air. This is exactly what the apparatus devised by George H. Fell, of Buffalo, and modified by O'Dwyer will accomplish. The apparatus originally presented by Dr. Fell at the International Congress held in Washington, September 7, 1893, consisted simply of a hand bellows connected to a tube inserted in the trachea; this apparatus he modified himself by substituting for the tracheotomy tube a face mask which fitted closely over the nose and mouth; the air was thus forced into the larynx through the natural passages, and the expired air was allowed to escape externally by a side outlet in the injecting tube, the outlet being opened or closed by the finger of the operator. (See Fig. 9.) The disadvantages and uncertainties of the oro-nasal method have been so thoroughly pointed out by all observers from the most ancient times to the present that we need not insist upon them. Hence, we find that in cases in which the simple oro-nasal method is not satisfactory, Fell resorts to the tracheotomy. The additional dangers of tracheotomy led O'Dwyer to so completely modify Fell's appliance that the apparatus at present sold by manufacturers as the Fell-O'Dwyer apparatus is in reality an original instrument solely in virtue of O'Dwyer's modification. O'Dwyer's improvement consists in a long intubation canula that is fitted with a conical tip so graduated in size that it will fit almost any larynx. There are several laryngeal tips to fit the larynx according to ages. The conical tip is so designed that it will readily wedge itself into the glottis, and prevent air from escaping between it and the laryngeal walls. The proximal end

1. Thoracic Resection for Tumors Growing from the Bony Wall of the Chest, by F. W. Parham, M.D. Transactions Southern Surgical and Gynecological Association, vol. xi., 1899.

at the handle is practically bifurcated, one branch receiving the ingoing air from the bellows, the other branch, stopped by the operator's thumb (which acts as a valve), serves as an exit for the air. (See Fig. 5.) While I have shown in the historical part of this paper that the O'Dwyer apparatus as it is known at present has been anticipated in its individual constituent parts as well as in the principles of its action by many experimenters, it must be recognized that for simplicity and

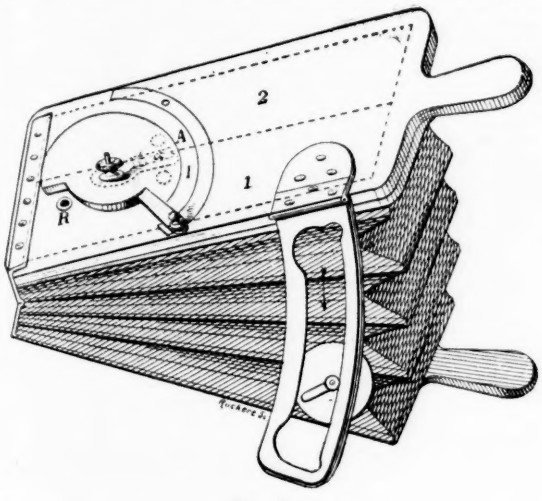


FIG. 6.

Doyen's compound automatic hand-bellows for insufflation and aspiration of air in and out of the lungs. (From Doyen's "Technique Chirugicale," p. 128.)

efficiency it has no rival. It is also quite original in some details of importance, more especially in the form of the tips, which are admirably adapted to fit the larynx of all patients and all ages and in the control of the outlet, which is opened and closed by the thumb of the operator, thus dispensing with all mechanical valvular arrangements.

O'Dwyer's instrument possesses several advantages over the apparatus designed by Doyen (see Figs. 6, 7 and 8): First, in the greater ease of its introduction; second, in the better adaptation to the various sizes of the glottic aperture through its graduated conical tips;

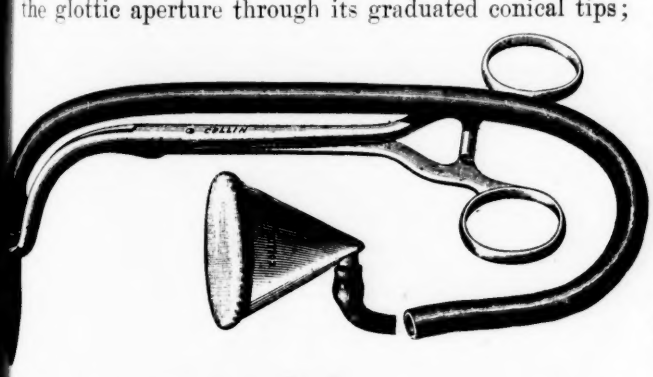


FIG. 7.

Doyen's intralaryngeal tube and rubber connections, with funnel attached, for laryngeal tamponade and chloroform anesthesia. The cut shows the special forceps used to introduce the tube. The intubating canula may be used for direct air insufflation. (From Doyen's "Technique Chirurgicale, Fig. 43, p. 123.)

third, in the fact that it is a continuous resisting metallic instrument from the glottis to the handle, and requires no auxiliary forceps for its introduction; fourth, in the fact that it can be used as a tractor which favors the elevation of the larynx and steadies the tongue; fifth, in the fact that it can remain *in situ* and still permit of normal respiration or of artificial respiration when this is required; sixth, in the security that it furnishes against accidental obstruction by the bite of the patient. (The Doyen connecting tube is made of rubber, and can be easily compressed between the jaws.) As a whole, therefore, it is difficult to conceive any contrivance better adapted for its purpose than the O'Dwyer instrument.

Since its introduction in the Charity Hospital, Dr. Bloom has found it advantageous to modify the accessory or inflating part of the apparatus by several additions which deserve mention, as they save unnecessary exertion on the part of the operator and diminish the strain on the bellows. These consist in the addition of a long lever, which is used as a treadle to compress the bellows with the foot, and in the addition of a metallic cylinder which is fitted with absorbent cotton to filter the air as it passes from the bellows to the patient. (See Fig. 10, Dr. Bloom's modification of the Fell-O'Dwyer apparatus.)

In constructing an insufflating apparatus for my own use it also occurred to me that the original O'Dwyer apparatus could be advantageously modified for surgical purposes. As originally designed, the Fell-O'Dwyer

FIG. 8.

Doyen's tongue retractor for the application of intralaryngeal intubation. (Fig. 44, p. 123, "Technique Chirurgicale.")

apparatus was intended solely for non-surgical conditions, principally for the treatment of opium narcosis. Consequently no provision was made by the originators for the maintenance of anesthesia while artificial respiration was being applied. I have, therefore, altered the laryngeal canula by furnishing a branch and stopcock, which are connected to a rubber tube and funnel. The funnel is covered with a flannel screen, and is used as an inhaler, exactly as in the Trendelenburg canula.

The idea of administering anesthetics by intubation directly into the larynx is also a suggestion that has occurred to several surgeons. Junker, I believe, at one time referred to it, and illustrates an apparatus for the purpose, attached to his inhaler. Doyen uses a tube and funnel attached to his intubating canula, but has made no provision for this necessity in his insufflating apparatus. Our fellow and colleague, Dr. Souchon, in 1895, while experimenting with various methods of anesthesia in nasopharyngeal practice, tried to administer chloroform through an intubating tube, but owing to the imperfection of the instrument and other difficulties he did not persist in this direction. The advantage of combining an anesthetic apparatus which can be readily controlled, together with an intralaryngeal tampon canula and insufflating apparatus, can be easily realized by anyone who has given any thought to this difficult and formidable phase of surgery. I have also modified

the O'Dwyer instrument by altering the shape of the handle; in the apparatus here shown (see Fig. 11, author's modification of the Fell-O'Dwyer apparatus), the handle is shaped like that of a pistol; this shape permits of easy traction on the larynx and root of the tongue, a matter of no small consequence in amputations and operations on this organ, which is very desirable to bring the vascular and less accessible regions of the base as near the line of the teeth as possible. In addition to this I have added a registering mercurial manometer which will gauge the actual amount of pressure required to inflate the lungs. While this is not essential, the addition of a gauge transforms the original empirical apparatus into an instrument of precision which will be helpful when the instrument is to be handled by unskilled or inexperienced persons. It is important that the operator should always remember that the safety of insufflation of the lungs rests largely upon the manner in which it is applied, and that violence, undue haste and excessive pressure are liable to defeat the very purposes for which the instrument is intended. Tuffier and Hallion demonstrated in their experiments that a pressure of 6 mm. mercury is all that is required to overcome the elasticity of the lung and equalize the air-pressure. They also determined that an intrabronchial pressure equal to 33 mm. mercury arrested respiration. Hence the importance of thorough instruction in these matters and the value of

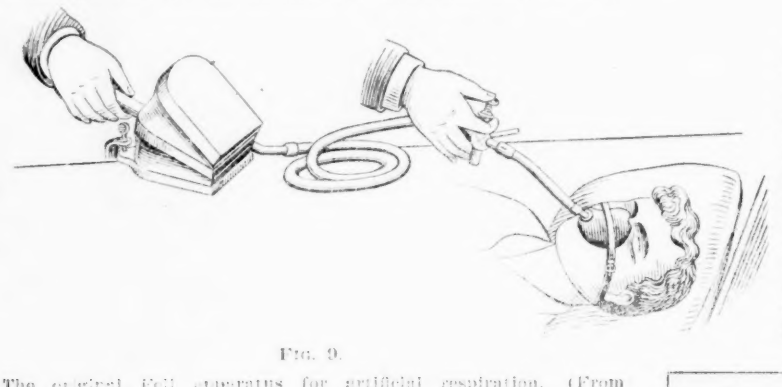


FIG. 9.

The original Fell apparatus for artificial respiration. (From Treves's "Mechanics of Surgery," p. 215.)

This shows the face shield and air central valve. In many cases of simple narcosis this apparatus will suffice, but for surgical insufflation of the lungs the intraglottic intubation attachment of O'Dwyer is indispensable. The hand-bellows devised by Fell, with hose and valve, may be used with the O'Dwyer intubator.

a manometer for teaching purposes. I have also modified the apparatus so that it is provided with one aspirating as well as insufflating valve. While the aspirating valve is rarely used, it may occasionally find application in cases of excessive clogging of the larynx with mucus, food, foreign matter, and other substances that may threaten life by their presence. Furthermore, the aspirating valve may be utilized to insufflate oxygen pure or mixed with atmospheric air.

In summing up the peculiarities of the apparatus that I have the pleasure of exhibiting to you I would call attention to the following facts:

The original O'Dwyer canula, while retaining its intralaryngeal portion unchanged, is modified so that it may be utilized: 1, as a respirator; 2, as a tampon canula; 3, as an anesthetizer; 4, as a tractor of the larynx and tongue; 5, as an insufflator; 6, as an aspirator. I need not emphasize the value of an intralaryngeal apparatus that, while allowing of anesthesia and artificial respiration, will also act as a laryngeal plug. In this way the complicating operation of tracheotomy is eliminated, and extensive operations on the tongue, palate, nose and nasopharynx, in which Kocher's pharyngeal tamponade is indicated, can be performed without risk of suffocation from the entrance of blood in the larynx, and without resorting to Rose's position.

Anyone who has attempted the removal of a vascular fibroma of the pharyngeal vault, or has tried the total extirpation of the tongue, will readily appreciate the value of an apparatus that will permit of easy respiration while the larynx is securely plugged.

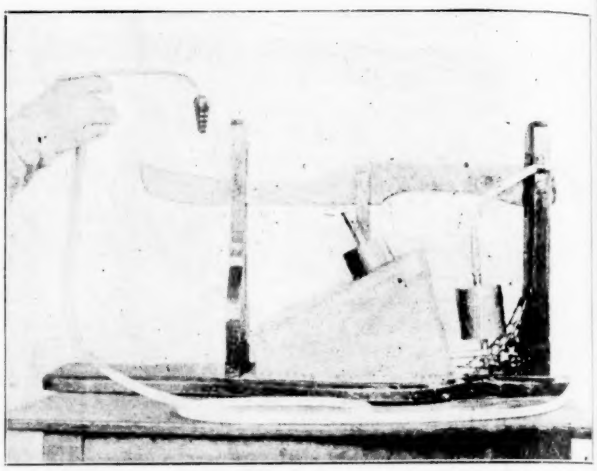


FIG. 10.

Dr. J. D. Bloom's modification of the Fell-O'Dwyer apparatus as used in the Charity Hospital of New Orleans. The following points can be readily noticed in the illustration: 1. Bellows for insufflating air. 2. Cylinder and tube over inlet of bellows. The tube may be attached to an oxygen gas bag or cylinder, in cases of asphyxia in which it is desirable to supply pure or diluted oxygen directly to lungs. 3. Cylinder filled with absorbent cotton to filter the air after it has escaped from the bellows. 4. Rubber tubing connecting bellows with intralaryngeal tube. 5. Intralaryngeal tube and handle. (Original O'Dwyer instrument.) 6. Treadle or lever operated by the foot to compress bellows. May also be used as a hand lever.

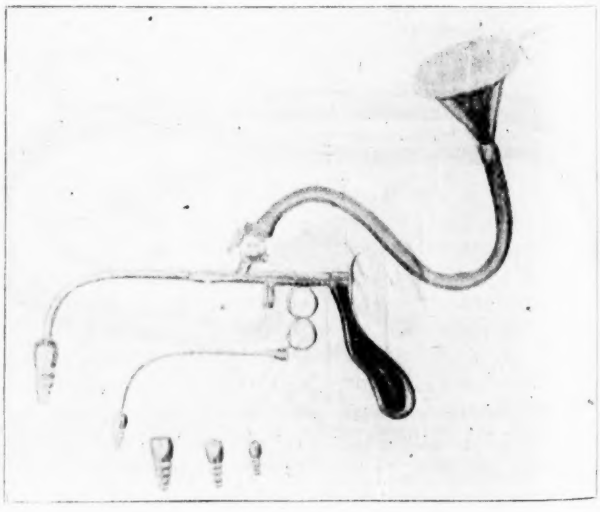


FIG. 11.

The author's modification of O'Dwyer's intubating apparatus for surgical cases in which artificial respiration or pulmonary insufflation may be required with anesthesia. The stopcock controls the supply of the anesthetic without interfering with the passage of air furnished by the bellows or air pump.

While I fully recognize the comparative rarity of the cases in which intralaryngeal tamponade is required, and I am the first to admit that with the help of a modi-

fied or mixed morphin-chloroform anesthesia and Rose's position, the majority of oropharyngeal operations can be performed without the aid of an intubating apparatus. I believe that there are occasions in the practice of every active surgeon in which such an apparatus as I have shown you will prove a veritable Godsend.[2]

BIBLIOGRAPHY.

In addition to the references given in the text, the author acknowledges his indebtedness to the following sources of information:

Maurice Perrin: Asphyxia. Dict. Encycloped. des Sciences Med. Dechambre, Tome vi., 1868.

Depaul: Nouveau-né. Dict. Encycloped. Dechambre, vol. xiii, (2me Série), 1879.

Depaul: Bulletin de l'Académie de Médecine, Sept. 4, 1877.

Ch. Vibert: Respiration Artificielle. Nouveau Dict. de Med. et de Chirurgie pratiques (Jaccoud), vol. xxxi., 1882.

G. Tourdes: Submersion. Dict. Encyclop. des Sciences Med., Dechambre, Tome xii., (3me Série.) 1883.

The author: The Surgery of the Chest and Some of the Problems Related to the Treatment of its Penetrating Traumatisms and their Immediate Complications. An address by the chairman of the Section of Surgery. Trans. La. State Med. Society, 1898. [The first twelve propositions in the introductory section of this paper are almost literal condensations of statements made in this address.]

The author: On the Management of Acute Traumatic Pneumothorax. Annals of Surgery, Philada., vol. xxix., 1899, pp. 409-434.

Therapeutics.

Correction.—In the item on "Pruritus Ani," in THE JOURNAL of May 26 (p. 1330), the word "varicosity" should be substituted for "pruritus" in the seventh line.

Carbonated Saline Baths in Renal Disease.

At the Twenty-first Congress of Balneology, held recently at Frankfort-on-the-Main, Leber (*Berliner Klin. Woch.*, April 2, 1900, p. 310) stated that, heretofore, in the treatment of chronic diseases of the kidney—contracted kidney—the greatest stress has been laid on reduction in the amount of albumin eliminated, and to this end, in addition to other dietetic measures, only white meat prepared in an unirritating manner and large quantities of fluid in the form of milk and alkaline waters were prescribed. In consequence of the monotony of the diet the appetite of the patient was not stimulated, and on the other hand, in consequence of the generous administration of the fluid, there was increased danger of relaxation of the heart, which is likely to occur even under the most favorable conditions in cases of contracted kidney. In order to avert the latter, and the greatest danger, it has become customary within recent years to diminish and carefully regulate the amount of fluid given and to send the patients to resorts at which the carbonated saline baths employed in the treatment of diseases of the heart are available, and where all other forms of heart-exercises are employed.

Leber has treated a number of cases of renal disease according to these principles, particularly since two new springs have been sunk within two years at Hamburg, and which, in the amounts of saline matter and carbon dioxid that they contain, compare favorably with the best of the springs of like character. The cases included, with a few exceptions in which the compensation of the heart was still preserved, principally patients with contracted kidney already suffering from symptoms of cardiac asthma and dilatation of the heart. Keeping in mind the peculiar conditions of vascular pressure in cases of contracted kidney, in accordance with which an increase of the blood-pressure is present and a reduction in the blood-pressure takes place in conjunction with derangement of compensation, and in cases of obesity, most rigorous individualization is required with regard to the amount of saline matter and of carbon dioxid present in the water and of the temperature of the bath. In this way diminution in the area of cardiac dulness was effected, with an improvement in the pulse as regards strength, regularity and frequency. As a further adjuvant in the treatment, sponging with tepid or cool water and systematic exercises were employed, the first only in a few cases in order to stimulate the peripheral and relieve the internal circulation, and the latter in all cases, although many authorities consider the systematic exercises contraindicated in cases of chronic nephritis and arteriosclerosis. Proper respiration during the exercises is of the greatest importance, and in some cases systematic respiratory exercises should at first take the place of all others.

For Hay-Fever.

℞ Zinci phosphidi ..... gr. 1/16
Quininæ sulphatis ..... gr. ii
Ext. belladonnæ ..... gr. 1/8
M. Sig. One pill before each meal.
—*Wells: Medical Record.*

Sore Nipples.

℞ Balsam Peru
Tinct. arnicæ, āā ..... ℥ss
Ol. amygdalæ express
Aquæ calcis, āā ..... ℥ss
M. Sig. Shake well, and apply to inflamed nipples with a camel's hair brush after cleansing them with borax and water.
—*Scarff.*

Treatment of Dysentery.

Gastinel has obtained excellent results from the rectal injection of potassium permanganate in dysentery, says the *Therapeutic Gazette*. He employs the drug in the strength of eight grains to the quart. Half of this quantity is given at a dose, and is allowed to remain in the bowel from half a minute to two minutes. The water is either cold or warm, according to the needs of the case. For the removal of large quantities of mucus in the bowel he employs an injection of a pint of water in which is dissolved thirty grains of sodium bicarbonate. This is followed by a permanganate injection, and after that has been given the patient is made to lie down and rest for at least half an hour, in order to secure immobilization of the intestine. It is claimed that by this treatment the pain and restlessness are diminished. In many cases it is only necessary to inject one or two ounces of fluid. Often it is wise to give a small dose of calomel for a time, to increase the hepatic activity. When children receive this treatment, one or two grains of permanganate to the quart of water is sufficient.

Hypodermic Use of Orthoform.

Dr. Florentino A. Loza says that the formula used in the military hospital at Buenos Ayres, for associating the analgetic action of orthoform with calomel, used hypodermically in syphilis, is as follows:

℞ Ol. of vaseline ..... gr. 150
Calomel ..... gr. 67½
Orthoform ..... gr. 12
M. Sig. From fifteen to thirty drops of this preparation have been used without signs of intolerance or intoxication.—*N. Y. Med. Jour.*

Varicose Ulcers.

Carl Beck uses a gelatin zinc cast in the treatment of varicose ulcers. The composition of the paste is as follows:

℞ Zinci oxidi ..... 20 parts
Gelatini ..... 80 parts
Glycerini ..... 20 parts
Aquæ q. s. ad ..... 200 parts
—*Med. Rec.*

Pulmonary Emphysema.

For twenty days in each month give with each meal:

℞ Potassi iodidi 10
Aquæ, q. s. ad 300
M. Sig. Dose teaspoonful.

During the remaining ten days:

℞ Sodii arsenatis 10
Aquæ 300
M. Sig. Teaspoonful.

Every eight days at bedtime take .10 to .15 gm. of aloes in a pill. Drink milk with meals and exclude tobacco and alcohol. If possible take compressed-air baths.
—*Jour. de Méd. de Paris.*

2. Since the reading of this paper and the exhibition of my apparatus before the Association, I have experimented with the view of substituting an air-pump operated by hand for the foot-bellows of the Fell-O'Dwyer apparatus. The action of the pneumatic pump can be regulated with the ease and nicety of an instrument of precision, and, when combined with a manometer and aspirating valve, is more suitable as a permanent instrument for hospital use, where the frequent calls made upon the apparatus are not as likely to impair its efficiency as is the case with the ordinary bellows. This last model has not yet been completed, and is, therefore, not illustrated in this paper.

Alcoholism.

℞ Spts. ammon. aromat. ..... ℥ii
Tinct. camphoræ ..... ℥iss
Tinct. hyoscyami ..... ℥iiss
Spts. lavandulæ comp., q. s. ad ..... ℥ii
M. Sig. Teaspoonful every hour or two until relieved.
—*Aitken.*

℞ Zinci oxidi ..... gr. xvi
M. Div. in pil. No. xii. Sig. One pill three times a day.
—*Morris.*

℞ Zinci oxidi ..... ℥i
Piperinæ ..... ℈i
M. et. ft. pil. No. xx. Sig. One pill three or four times a day. (In chronic form.) —*Chapman.*

℞ Tinct. capsici
Tinct. zingiber, āā ..... ℥i
Tinct. valerianæ ammon.
Tinct. gentianæ co, āā ..... ℥i
M. Sig. Take a dessertspoonful in teacupful of hot tea three or four times a day. —*Gerhard.*

Gonorrheal Epididymitis.

In addition to local applications and rest in bed, the following, taken internally, acts most delightfully:

℞ Tinct. pulsatillæ ..... gtt. xlviii
Syr. zingiberis ..... ℥i
Aquæ, q. s. ad ..... ℥iii
M. Sig. A teaspoonful every hour or two.
Med. Fortnightly.

Care of Mouth, Throat and Nose in Typhoid Fever.

The nasal cavities and mouth should be washed out regularly and carefully with a weak solution of boric acid. If the patient is able to gargle, the following may be used to advantage:

℞ Salol ..... gr. lxxx
Tinct. benzoinæ ..... gtt. xxx
Spt. menthæ pip ..... ℥viii
M. Sig. One teaspoonful in a glass of water as a gargle. Cleanse the tongue and gums frequently by means of a bit of absorbent cotton held in forceps, and wet with boroglycerin (10 per cent.). Introduce several drops of menthol vaselin (5 per cent.) or boric-vaselin (10 per cent.) into each nostril.

Ichthyol in Renal Tuberculosis.

Goldberg, in the *Berl. Klin. Woch.*, refers to Palet's statistics, and shows that of 136 cases of nephrectomy done for renal tuberculosis, 51, that is 40 per cent., died, and that only one-third of those operated on lived over one year. This is due to infection of other organs. He recommends ichthyol internally.

℞ Ichthyoli sulpho-ammoniac ..... |
Aquæ dest, āā ..... 20 |
M.

Ten to seventy drops in water three times a day after eating. The larger the dose the sooner the curative action. Besides causing a general improvement, the local action was good—the hemorrhages ceased and the suppuration diminished, as did also the tenesmus and pain. It may be given for years.—*Ther. d. Gegenw.*

Pultaceous Sore Throat in Children.

For pultaceous sore throat in children, Dr. E. Monmarson presents the following, which is said to be very efficacious:

℞ Calcium permanganate ..... gr. i—iii
Aquæ dest ..... ℥v
M. Sig. For external use.

The throat is washed out with a very warm boric lotion every three hours during the day, and once or twice during the night. After each washing out the affected parts are painted with the above solution, care being taken to detach the false membranes, but without undue force.

On the second day there is said to be manifest improvement, and, in the majority of cases, the disease is said to be aborted; the use of an exclusively milk diet and the administration of a few doses of antipyrin completing the cure.

For Mumps.

℞ Ichthyol
Plumbi iodidi, āā ..... gr. xlv
Ammon. chlorid ..... gr. xxx
Lard ..... ℥i
M. Sig. Apply to swollen glands three times daily.

Medicolegal.

Presumption As to Boy Under Fourteen.—The Supreme Court of Georgia holds, Bird vs. State, that if, in the trial of a boy charged with the offense of assault with intent to rape, it be shown that the accused is under the age of fourteen years, a presumption arises that he is physically incapable of committing the crime; and, where there is no proof to rebut such presumption, a verdict of guilty is contrary to the evidence and to law.

Statute Relative to Rape Constitutional.—The Supreme Court of Washington holds that the statute of that state making carnal knowledge of a female under the age of 18 years the crime of rape is valid, and a proper exercise of legislative power. It also holds, in the case of State vs. Phelps, that the authorities relative to the common law crime of rape are not applicable to the crime designated in the statute, so that it is sufficient if the information conforms to the terms of the statute.

Motive in Malpractice Case.—The Wisconsin statutory provision that no action for personal injuries shall be maintained unless notice in writing of the injury, stating the time and place of its occurrence shall be served on the person causing the injury, within one year after such time, the Supreme Court of Wisconsin holds, in Meisenheimer vs. Kellog, is in the nature of a statute of limitations, and does not make the giving of the specified notice a condition precedent to a cause of action for malpractice. One of the technical consequences of this is, as brought out in this case, that, being a statute of limitation an objection that the notice was not given must be taken either by answer or demurrer, or it is waived, and the court even doubts whether the objection can be taken by demurrer, under the present Wisconsin statute regulating the grounds of demurrer.

Concealed Venereal Disease in Wife.—In Vondal vs. Vondal, a suit brought by a husband for the annulment of a marriage, the Supreme Judicial Court of Massachusetts has overruled exceptions to a decree for the wife and denying the husband the relief sought. It says, in explanation, that, although, at the time of her marriage, the woman was afflicted with syphilis, and knew of her disease, and concealed it from the man to whom she was married, the disease at that time was probably not contagious and could have been so treated that it would not be communicated by contagion and so as probably to make her free from suffering any ill effects from the disease. It is to be presumed that she could bear children, although her offspring would probably have been affected by the disease. The marriage was followed by cohabitation for four months, and consummation must be presumed. In other words the court holds, as it itself states it, that the concealed existence of venereal disease of such a character in one of the parties to a marriage which has been consummated is not a sufficient ground for a decree of nullity of marriage.

Non-Expert Evidence on Insanity Not Curtailed.—Section 1870 of the California Code of Civil Procedure provides that evidence may be given of the "opinion of an intimate acquaintance respecting the mental sanity of a person, the reason for the opinion being given." Apparently resting on this, it was held, in the murder case of People vs. Ellsworth, where the sole defense was insanity, that acts and declarations of the defendant could not be shown by the testimony of an acquaintance unless counsel also asked the witness his opinion of the defendant's sanity or insanity; counsel for defendant at the time stating that he did not intend to ask questions of that kind of the witness. This ruling, the Supreme Court of California holds, was erroneous. Section 1870, it says, refers alone to cases where opinion evidence may be given, and in no way curtails the right of the defendant to show his acts, declarations, etc., as evidence tending to prove his insanity. Whether or not those acts and declarations are simulated, it adds, is a question of fact for the jury. Another point, which the supreme court

makes in this case, is that if fear that he was in great peril of his life working upon the defendant's mind in no degree partook of the character of a delusion, evidence of the fear, even if the latter was unfounded, was inadmissible as in any way tending to prove the defendant's insanity.

A Libel on Its Face.—A newspaper article, the Court of Appeals of New York holds, is libelous upon its face, where it charges a physician with a want of professional ability and integrity, and thus endangers the gain derived from his vocation. Such an article, it says, in Krug vs. Pitass, is one which, referring to a physician, as such, calls him a blockhead or fool, and appeals to all of the foreign-born population of a certain nationality in the city not to intrust themselves or their families to his professional care, when he so hates them that he would not help them if he could. These words, it says, have a direct relation to his business, and assail him in his capacity as a physician. They touch his profession, because they hold him out as unworthy of employment, and appeal to his old patients to no longer employ him. The reflection is not simply upon his character as a man, but upon his character as a physician, for it imputes a want of those qualifications which attract patronage, and are essential to the calling. It tends to undermine him in the confidence of the community, which is the foundation of professional success. Calling a physician, as such, a blockhead or food, necessarily reflects upon his ability to practice medicine, and speaking of him as so influenced by hatred toward his patients that he would not heal them, necessarily reflects upon his integrity as a physician. Therefore, the court holds that such an article is actionable without proof of any damages, for the law imputes malice in its publication, and presumes that damages have been sustained from the bare act of publication. But while the physician so libeled is thus entitled to recover on account of implied malice, his damages, without further proof, it is held, will be limited to such an amount as will fairly compensate him for the actual injury sustained. In order to recover punitive damages also, it is necessary for him to furnish evidence of express malice, or malice in fact, as distinguished from malice implied.

Wants Clear Proof to Set Aside Will.—Article 1489 of the Revised Civil Code of Louisiana provides that "Doctors of physic, or surgeons, who have professionally attended a person during the sickness of which he dies, can not receive any benefit from donations inter vivos or mortis causa, made in their favor by the sick person during that sickness," etc. Article 1491 declares: "Every disposition made in favor of a person incapable of receiving shall be null and void, whether it be disguised under the form of an onerous contract, or be made under the name of persons interposed. The father and mother, the children and descendants, and the husband or the wife, shall be reputed persons interposed." But the Supreme Court of Louisiana holds, in the case of the Succession of Bidwell, that an attack made upon a will, on the ground of incapacity of the legatees to receive the benefit of bequests therein, made because they are the wife and children of the doctor who professionally attended the testatrix during the sickness of which she died, and are therefore reputed to have been interposed for him, can not be sustained, in the absence of satisfactory evidence being administered that the will was made during that sickness. For example, it was admitted that the provisions of the Code above quoted were applicable to this case, the only question being whether the decedent's will was made during the sickness of which she died. The will was made in 1890, and her death occurred in 1897. The contention was that for a great number of years previous to the making of the will, and continuously thereafter up to the time of her death, she suffered from heart disease, which resulted in her death, and that consequently she made the will during the sickness of which she died. This latter was even certified by the physician to have been phlebitis and heart disease. Nevertheless, the court comes to the conclusion, after making a very careful analysis of the evidence, that phlebitis, ensuing from an attack of la grippe suffered about three months previously and not the chronic heart disease, was the sickness of which she died, and, such being the case, it holds that the will was not invalid under the Code.

Current Medical Literature.

Titles not marked with an asterisk (*) are noted below.

New York Medical Journal, May 26.

1.—*Instruction of Hospital Corps, U. S. Army. William H. Wilson.
2.—*Septicemia Among Young Chickens. Leo F. Rettger.
3.—*Report of Case of Hematuria Due to Renal Carcinoma, with Endovesical Photographs. Frederic Bierhoff.
4.— Summer Plaster-of-Paris Jacket for Pott's Disease. R. T. Taylor. Smith H. McKim.
5.—*Application of Galvano-Cautery in Nose. Concluded.) Beaman Douglass.
6.—*General Characteristics of Ray Fungi and Their Relation to Certain Bacteria. Ludvig Hektoen.
7.—*Physical Training in School and Home. (Concluded.) Henry S. Pettit.
8.—*Dietetics of Convalescent Stage of Fevers. Adolph Rupp.
9.— Treatment of Anal Chancroids. Martin A. H. Thelberg.

Philadelphia Medical Journal, May 26.

10.—*Rickets. John L. Morse.
11.— Hospitals for Insane and Study of Mental Diseases. (*To be continued.*) Stewart Paton.
12.—*Intestinal Indigestion and Its Consequences. (*Concluded.*) Wm. H. Porter.
13.—*Syphilis: Special Pathology and Reclining Rest-Treatment in Constitutional Stage. Samuel H. Friend.
14.— Friedreich's Disease with Report of Fatal Case. F. Savary Pearce. John M. Swan.
15.— Clinical Notes on Case of Paranoia. Albert W. Ferris.

Medical Record (N. Y.), May 26.

16.—*Remarks on Some of the Conditions Simulating Appendicitis and Peri-appendicular Inflammation. E. G. Janeway.
17.—*Contribution to Treatment of Rupture of Parturient Womb—With Critical Review of Vaginal Operation. A. V. Wendel.
18.—*Loss of Hair; Clinical Study Founded on Three Hundred Private Cases. George T. Jackson.
19.— Cellular Specificity and Its Bearing on Neoplasms. B. H. Buxton.
20.—*Note on Treatment of Chronic Disease by Artificial Nauheim Baths. Abraham Mayer.

Boston Medical and Surgical Journal, May 24.

21.— Some Thoughts of Medical Education. Frederick C. Shattuck.
22.—*Ideal Ration for Army in the Tropics. (*Concluded.*) Edward L. Munson.
23.—*Ischemic Paralysis and Contracture of Muscles. Augustus Charles Bernays.

Medical News (N. Y.), May 26.

24.—*Cystitis Papillomatosa. Frederic Bierhoff.
25.—*Medicinal and Non-Medicinal Remedies; With Points on Hydrotherapy, Diet and Massage in Certain Diseases Attended with High Temperature. Charles E. Page.
26.—*Organotherapy in Tabes and Other Nervous Diseases. Martin A. H. Thelberg.
27.—*New Method for Reroperitoneal Drainage of Pyosalpinx, with Report of Five Cases. Leon F. Garrigues.
28.— Inaugural Address. Edward D. Fisher.
29.— Three Cases of Subcutaneous Capillary Hemorrhage in Epilepsy. Charles J. Aldrich.

Cincinnati Lancet-Clinic, May 26.

30.— "Our Students and Our Teaching." Joseph Ransohoff.
31.—*Sudden Death. Louis Schwab.

Pediatrics (N.Y.), May 1.

32.— Report of Case of Chronic Valvular Endocarditis and Acute Nephritis, Following Chorea. John M. Swan.
33.—*Abatement of Dental Caries in Public School Children. Arthur DeVoe.
34.— Fracture of Upper Third of Left Femur in Infant. Robert T. Gillmore.
35.—*Present State of Our Knowledge of Action of Various Therapeutic Serums—With Some Remarks Concerning Use of Pane's Antipneumonic Serum in Children. Antonio Fanoni.
36.— Case of Amnesia. Philip F. Barbour.
37.— Case of Peliosis Rheumatica Caused by Traumatism. Louis Fischer.

American Practitioner and News (Louisville, Ky.), April 15.

38.— Report of Some Cases of Foreign Bodies in Eye: Their Detection and Management. J. Morrison Ray.
39.— That Patient Who Is "Always With Us." Giffard Knox.

Railway Surgeon (Chicago), May 1.

40.— Some Pets of a Country Doctor's Armamentarium. E. Steiger.
41.— Value of Manipulation in Some Surgical Conditions. Samuel Bell.
42.— Important Step Needed in Railroad Hygiene. R. F. Harper.

Journal of Boston Society of Medical Sciences, April.

43.— Histology of Acute Lobal Pneumonia. Joseph H. Pratt.
44.—*Relation of Age, Physique and Preliminary Training to Class Rank in Pathology. George B. Magrath.
45.—*Report on Examination for Diphtheria Bacilli of Cultures From Four Hundred and Seventy-five Healthy Individuals. F. P. Denny.
46.— Case of Multiple Myeloma. James H. Wright.
47.— Additional Observation on Morphology of Digestive Tract of Cat. Franklin Dexter.
48.—*Few Experiments Upon Effect of Low Temperatures and Freezing of Typhoid Bacilli. Wm. Hollack Park.

Indiana Medical Journal (Indianapolis), May.

49.— Treatment of Diseases of the Stomach. (*To be continued.*) Alois B. Graham.

American Journal of Insanity (Baltimore, Md.), April.

50.—*Epilepsy, Rickets and Lymphatic Constitution. A. P. Ohlmacher.
51.— Some Early Pathologic Changes in Ganglion Cells, with Report of Case. Maud B. Martin.
52.— Epilepsy with Retrograde Amnesia. Edward Cowles.
53.— Stigmata of Degeneration. Walter Channing.
54.— Revision of Insanity Law of Virginia. William Francis Drewry.
55.—*How to Deal with Insane. Edward C. Runge.
56.— Etiology of Progressive Paralysis. R. v. Krafft-Ebing.
57.—*Care of Recent Case of Insanity. C. B. Burr.
58.— Position of Study of Psychopathology in Pathological Department of Michigan State Asylums for Insane. Theo. Klingmann.
59.— Semiannual Critical Digest of Some of the Literature on Epilepsy. L. Pierce Clark.

Cleveland Journal of Medicine, April.

60.—*Intussusception in Child of Seven Months; Operation and Recovery. F. S. Clark and F. E. Bunts.
61.— Treatment Preparatory for Parturition. O. T. Maynard.
62.— Current Thoughts on Etiology and Treatment of Pneumonia. T. H. Brannan.
63.—*New Growth of Tonsil—Syphilitic or Malignant? Howard S. Straight.
64.—*Primary Epithelioma of Tonsil. John M. Ingersoll.
65.— Comments of Eye-Testing in Cleveland Public Schools. Leigh K. Baker.
66.— Anastomosing Appendix. R. J. Wenner.

Journal of Nervous and Mental Diseases N.Y.), May.

67. Inaugural Address Before the American Neurological Association. Edward D. Fisher.
68 Tumor of Superior Parietal Convolution, Accurately Localized and Removed by Operation. Chas. K. Mills and W. W. Keen. With Pathologic Report on Nature of Growth. W. G. Spiller.
69.—*Case of Amaurotic Family Idiocy. Hugh T. Patrick.
70.—*Case of Amaurotic Family Idiocy. Sydney Kuh.
71.—*Appearances of Fundus Oculi. Chas. H. Beard.
72.— Raynaud's Disease in Insane. J. E. Courtney.
73.— Two Cases of Muscular Atrophy of Peroneal Type. Given Campbell.

Journal of Medicine and Science (Portland, Me.), April,

74.— Cancer of Rectum in Female, with Report of Case. Wallace K. Oakes.
75.— Abortion, Its Cause and Treatment. C. W. Price.
76.— Observations on Obstetrics. J. B. O'Neil.
77.— Care of Eyes of New-Born. J. F. Hill.
78.— Climatic Treatment of Tuberculosis. George M. Randall.

Journal of Medicine and Science (Portland, Me.), May.

79.— Relations of Ametropia to Affections of Eye and Nervous System. E. E. Holt.
80.— "Running" Ears of Childhood. Plea for Their More Careful Attention. H. T. Clough.
81.— Neurone. Wm. B. Small.
82.— Masso-Therapeutics. E. H. Judkins.
83.— Gunshot Wound of Abdomen with Recovery. H. B. Palmer.

Ophthalmic Record (Chicago), May.

84.—*Spontaneous Luxation of Lens, and Zonular Cataract. M. F. Weymann.
85.— Foreign Body—Piece of Gunlock Imbedded in Frontal Sinus for Six and a Half Years—Removal. H. Bert Ellis.
86.—Fibers from Lamina Cribrosa Extending Out from Optic Disc Over Retina. Frank C. Todd.
87.— Hysterical Blindness with Report of a Case. George S. McReynolds.
88.—*Unusual Complication Occurring After an Operation for Orbital Lipoma. H. V. Würdemann.
89.— Simplified Method of Testing with Trial Prisms. Frederick H. Verhoeff.

Canada Lancet (Toronto , April.

90. Splenectomy. Colin A. Campbell.
91.— Trephining and Neurectomy for Case of Infantile Palsy. J. T. Fotheringham.
92.— Case of Intestinal Perforation in Typhoid Fever. Operation. Death. G. N. Fish.
93.— Tinea Versicolor. N. E. Aronstam.

Annals of Gynecology and Pediatry (Boston), May.

94.—*Vaginal Route. O. Beverly Campbell.

Archives of Neurology and Psychopathology, Vol. ii, Nos 3 and 4, 1899.

95.—*Clinical Studies in Epilepsy. L. Pierce Clark.
96.— On Absorption of Proteids. P. A. Levene and I. Levin.
97.— Embryochemical Studies. P. A. Levene.
98.—*Sequence of Changes in Optic Chiasm Produced by Acromegalia, as Exemplified in Three Cases. Ward A. Holden.

Interstate Medical Journal (St. Louis, Mo.), May.

99.—*Ischemic Paralysis and Contracture of Muscles. Augustus C. Bernays.
100.— Pathology of Pneumonia. Robert Luedeking.
101.— Facts of Inheritance. J. Arthur Thompson.
102.— Some Recent Eye Cases. James M. Ball.
103.— Analytic Diagnosis of Abdominal Tumors. Byron Robinson.
104.— Surgical Treatment of Inguinal Hernia, and Varicocele on Same Side. Robert H. Wilson.

Medical Herald (St. Joseph, Mo.), May.

105.— Palliative Treatment of Carcinoma Uteri. Herman J. Foldi.
106.— Total Cliectomy. M. F. Weymann.
107.— New Application of Undulating Current in Gynecology. G. Apostoli.

Quarterly Journal of Inebriety (Hartford, Conn.), April.

108.—*Children of the Female Inebriate. Wm. C. Sullivan.
109.— Are the Uses of Tobacco Detrimental to Mankind? T. H. Marable.
110.— Morphinism. Louise C. Robinovitch.
111.— Alcohol and Alcoholism and Its Relations to Medical Profession. Charles Maefie.

Pacific Medical Journal (San Francisco), May.

112.—*Few Practical Points in Management of Labor. Wm. J. G. Dawson.
113.— Early Diagnosis of Cancer of Stomach with Case. Frank Rattan.
114.— Gynecologic Electro-therapy. George Adam.

Alabama Medical and Surgical Age (Birmingham), April.

115.— Legal Status of Medicine in Alabama. H. A. Moody.
116.— Hepatic Abscess. Mack Rogers.
117.— Peliosis Rheumatica and Report of Case. H. S. Ward.
118.— Hints of Obstetrical Management. C. C. Jones.
119.— Valedictory Address Before the Birmingham Medical College. Wm. W. Duncan.

Chicago Medical Recorder, May.

120.—*Early Diagnosis of Pulmonary Tuberculosis. George W. Webster.
121.—*Varieties of Appendicitis and Importance of Their Recognition, in Furnishing the Indications for Proper Treatment. Wm. D. Middleton.
122.— Case of Chronic Suppuration Involving the Frontal, Maxillary, and Sphenoidal Sinuses on One Side of the Head, with no Complication. George E. Shambaugh.
123.—*Hot Air Treatment for Nervous and Joint Affections. Harold N. Moyer.
124.— Case of Double Cryptorchidism, Complicated with Scarlet Fever. Clinical History. Edward H. Ochsner.
125.— Case of Double Pyosalpinx with Intestinal Resection Jacob Frank.

Medical Times (Philadelphia), May.

126.— Review of Potence and Impotence. Physiology, Pathology and Other Embarrassments of Procreative Powers. Review of Aphrodisiacs of Past and Present. Sexual Hygiene, in Married and Single Life, etc., etc., "Fecondite" (Zola) and "Krautzer Sonata" (Tolstoy). (Continued.) John J. Caldwell.
127.— Radical or Tentative Treatment of Piles. Thomas H. Manley.
128.— Etiology of Skin Diseases. W. R. Inge Dalton.
129.— Report of Case of Pott's Disease, with Wood-Plaster Jacket. Exhibited Before the Orthopedics Section of N. Y. Academy of Medicine. Edward A. Tracy.

Medical and Surgical Monitor (Indianapolis), May 15.

130.— Pachymeningitis: Report of Case and Autopsy. Samuel E. Earp and John T. Scott.
131.— Intestinal Diseases of Children. William T. Newton.
132.— The Practitioner. W. H. Link.

Canada Lancet (Toronto), May.

133.— Sick and Wounded in the War and How They Are Cared For. Wm. Nattress.
134.—*Case of Perforating Gastric Ulcer with Infection by Bacillus Aerogenes Capsulatus; with Synopsis of Literature on Infections by This Organism. Charles A. Page.
135.— Neurasthenia. D. Campbell Meyers.

Kansas City Medical Record, May.

136.— Importance of Accurative Primary and Consecutive Examinations After Fracture. Thomas H. Manley.
137.— Cure of Old Sinuses. Herman E. Pearse.
138.— Chronic Endocarditis. H. Jerard.
139.— Removal of Foreign Bodies from Nose and Ear. Chas. E. Clark.

Medical Examiner and Practitioner (N.Y.), May.

140.—*Diseases of Throat and Nose in Relation to Life Expectancy. W. E. Casselberry.
141.—*Early Diagnosis of Pulmonary Tuberculosis. George W. Webster.

Charlotte Medical Journal, April.

142.— Pneumotherapy in Diseases of Respiratory Tract. James Sawyer.
143.— Malaria-Mosquito. J. A. Reagan.
144.— Treatment of Endometritis. J. D. Smith.
145.— Genital Hemorrhage. Wilmer Krusen.
146.— Employment of Douche after Labor. Frank C. Hammond.
147.— Puerperal Infection. C. H. Long.
148.—Treatment of Tuberculosis Based Upon Results from Previous Pathological Examinations of Blood Sputum and Urine of Patients. L. H. Warner.
149.— Financial Side of Practice of Medicine. W. J. Weaver.
150.— Consumption and Its Treatment. L. E. Liggett.
151.— Effects of Alcohol in Health and Disease. C. Teal.
152.— Fracture of Skull at Vertex, with Series of Cases. Clinton B. Herrick.

Occidental Medical Times (San Francisco), May.

153.— Address Before the Medical Society of the State of California. George Chismore.
154.— Address Before the San Joaquin Valley Medical Society. E. C. Dunn.
155.—*Prevention and Treatment of Infectious Diseases of the Cornea. Wm. Ellery Briggs.
156.— Faulty Educational Methods as a Factor in Production of Insanity and Other Functional Neuroses. J. W. Robertson.
157.—*Injuries to the Eyes Due to Sunstroke. A. B. McKee.

Medical Bulletin (Philadelphia), May.

158.— Pemphigus. John V. Shoemaker.
159.— Galvanism; Food Primer; Food Causation of Cataract; Cancer; Diabetes and Locomotor Ataxia. Ephraim Cutter and John A. Cutter.
160.— Two Complicated Breech Presentations. L. Napoleon Boston.

Atlanta Journal-Record of Medicine, May.

161.— Climate of Porto Rico. Charles J. Proben.
162.—Four Cases of Penetrating Wounds of Abdomen with Visceral Lesions, and Wounds of Entrance Above the Umbilicus. Hugh M. Taylor.

163.— Fermentative Disorders of Alimentary Canal of Infants. L. G. Frazier.
164.— Address Before American Laryngological, Rhinological and Otological Society. J. A. Stucky.
165.— Medical Treatment of Inebriety. T. D. Crothers.
166.— Treatment of Inflammation. W. F. Church.

Medical Sentinel (Portland, Ore.), May.

167.— Personal Experience with Puerperal Eclampsia. J. F. Watt.
168.—*Report of Case of Sulphonal Poisoning. Amelia Zeigler.

Medical Times (N.Y.), May.

169.— Treatment of Pathologic Conditions of Female Generative Organs in Pelvis by Surgery per Vaginam. William H. Wathen.
170.— Catarrhal Pneumonia. W. N. Bryant.
171.— Modern Treatment of Scarlatina. F. P. Henry.
172.— Treatment of Acute Articular Rheumatism in Mount Sinai Hospital. L. A. S. Bodine.
173.—*Diseases of Larynx. Emma E. Musson.

Austin Flint Medical Journal (Mason City, Iowa), May.

174.— Physiologic Rest as Therapeutic Measure in Certain Functional and Organic Nervous Diseases. C. Eugene Riggs.
175.— Tumors, Malignant and Benign. D. W. Finlayson.

AMERICAN.

1. **Army Nurses' Instructions.**—Wilson gives an account of the training received by the United States Army hospital corps at Washington, D. C., and San Francisco. The men are selected because of their intelligence or former experience in nursing, and are drilled in the work of stretcher-bearers and hospital nurses. The instructions as to diet are given by a graduate female nurse. The results thus far have been extremely satisfactory.

2. **Septicemia in Chickens.**—Rettger describes an epidemic, occurring among young chickens two or three weeks old, which was due to a bacillus found in the blood, an actively mobile, non-liquefying, non-chromogenic, aerobic, and facultative anaerobic bacillus with slightly rounded ends. Grown on agar it is 2 microns in length, .03 to .05 micron broad, and usually occurs single. In bouillon the size may vary. It is non-spore-producing. On agar plates small white colonies appear in twenty-four hours. On potato the development is very slow. The bacillus does not produce indol, phenol, nor cresol. Its maximum temperature (moist) is 55 to 57 C. for the exposure of fifteen minutes, its optimum temperature is 35 to 37 C. The action of the more common disinfectants is as follows: A solution of corrosive sublimate, 1 to 60,000, kills it in two hours; one of carbolic acid, 1 to 220, kills it in two hours; solution of carbolic acid, 2.5 per cent. and soft soap, 1.5 per cent., 1 to 6, kills it in two hours. Inoculation experiments produce the disease, which is undoubtedly a sort of septicemia and apparently does not attack grown chickens.

3. **Hematuria.**—Bierhoff reports a case due to carcinoma, discovered by the cystoscope, which illustrates the unreliability of physical symptoms in the determination of the source of bleeding in vesical hemorrhage, and the value of the cystoscope for this purpose, as well as the freedom from danger when it is properly employed.

5. **Galvanocautery of the Nose.**—Douglas continues his article on the application of the galvanocautery to the nose. He shows the danger from partial destruction of tissue, leaving an uncauterized center which may produce septic processes, and mentions the importance of using such an electrode as will entirely destroy the slough. He cautions against the use of the cautery for such regions as the uvula, the faucial pillar, arytenoid region, glosso-epiglottic fold, pyriform sinus, and the region of the chorda muscularis, as an edema may be started which will be a serious matter. After complete healing, the structural changes caused by cauterization are the replacement of the physiologic tissue by means of connective tissue. He lays down as the first general indications that it be used on soft tissues and not on hard forms, such as cartilage, periosteum and bony structures. It will accomplish its best results on tissues composed of round cells and will not act so favorably on connective tissue. It is best used on tissue where the blood-vessels are to be destroyed, those that are the seat of chronic congestion rather than those which have gone on to a subsequent marked hypertrophy or a polypoid form of inflammation. He does not believe in treating the nasal septum, excepting the erectile tissue at the tuberculum septi in the upper half where it is the seat of vascular engorgement. In the turbinated bodies, it is limited to cauterization of hypertrophic masses in special localities and under particular conditions. The best results are obtained when the hypertrophy is accompanied by congestion and distension of the erectile tissue. On hypertrophied posterior tips which contract well under cocain, the cautery is especially indicated. The particular turbinated localities where it is safe to use the cautery are the inner and under surfaces of the inferior turbinate together with its inner and posterior ends, also the posterior ends of the middle turbinated, and sometimes the flabby hypertrophy of the anterior tip of the middle turbinated body, if an examination proves that it does not contain an accessory anterior ethmoidal cell. The cautery should never be used with polyps and it is not advisable in nasal hemorrhage except where it is non-surgical. In nasal ulcerations, if non-syphilitic or non-malignant, it may be used to stimulate healing, but must be used repeatedly and always at periods of about two weeks. It should never be used with malignant growths. In round-celled structures which are hypertrophied, such as adenoids, hypertrophied tonsils, enlargement of the lingual follicles at the base of the tongue, follicular pharyngitis and cellular infiltration in laryngeal tissue, it produces its most brilliant results without danger.

6. **The Ray Fungi.**—Hektoen gives a full description of the ray fungi according to the lights of modern literature, and discusses the question as to their relation to certain bacteria, especially those of tuberculosis and diphtheria. He finds that the usual designations—bacillus, bacteria, and bacteriologic—are not adequate to represent correctly and scientifically the exact situation, as has been emphasized by Hueppe.

7. **Physical Training in School and Home.**—Pettit concludes his article with a description of the methods of the Adelphi College, and urges the use of proper training begun early. It is important to teach the parents as to the necessity of the case.

8. **Dietetics of Convalescent Stage of Fevers.**—The nutrition of the convalescence following the febrile state is discussed by Rupp, who notices the value of carbohydrates and vegetable foods, and the necessity of paying attention to the tastes of the individual patients. Other particulars noticed were the regulation of the temperature, the baths, massage, electricity and the physician's advice as to alcoholic and sexual indulgence.

10. **Rickets.**—Morse's article describes the conditions of rickets, with their characteristic skeletal and muscular changes, and skin, glandular, respiratory and circulatory disturbances, etc. He considers improper food the most important etiologic factor, though hygienic conditions are not underestimated. As regards life, the prognosis is good. The treatment should be largely dietetic, low in carbohydrates, and high in fats and proteids, and the high fats are especially important, the best form being that found in milk. When the digestion will stand it, cod-liver oil should be given and the child should have the greatest possible amount of fresh air and sunshine. If a change of climate is possible the seashore is preferable to the country. Salt baths, massage and rubbing are useful. While there is no specific for rickets, phosphorus has been strongly recommended, but he himself has seen no benefit from its use. The anemia is best treated by iron. Symptoms and complications should receive proper treatment as they arrive. The best plan to prevent deformity is to discourage the formation; to keep the child from sitting up, standing or walking while the bones are yet soft. Postural treatment will do something for deformities of the spine, and manipulation for those of the extremities. Mechanical treatment is of little use after the child is over 2 or 2½ years of age. Many slight deformities, however, disappear with growth.

12. **Intestinal Indigestion.**—Porter continues his article on intestinal indigestion by first showing that the stomach is not primarily affected, though it may be difficult to exclude it in chronic cases. The liver is inactive; the diarrhea is more or less irritating; indican and excessive uric acid are the two most common urinary symptoms, the excess of acid producing bladder irritation. The constant absorption of toxic compounds from the alimentary canal causes liver disturbances and the central nervous system is poorly nourished and unduly irri-

tated. Hence there may be various cerebral symptoms, headache, insomnia and mental disturbances. The nonparasitic skin affections are in a large measure only the symptoms of intestinal indigestion. He has found a pronounced degeneration of the cardiac muscle present in a number of cases. The prognosis of these troubles is good if they are recognized early. The principal thing in the treatment is regulation of the diet, and the tastes of the patient can not be considered in this, as in many instances it is necessary for it to be limited to two or three articles of food, such as milk, barley gruel or broth. The patients may think they are getting worse, because of the loss of flesh while the process of normal digestion is being established. It may be necessary to cut out the fats or sugar of milk, and this may be accomplished in the former instance by ordering an exclusive skimmed-milk or buttermilk diet, and in the latter by ordering an exclusive diet of kumyss, zoolak, kefir or sumal, in which case a little alcohol is advisable to keep up the animal heat. It is an important point to know that all animal foodstuffs contain but little of lecithin and hemoglobin forming substances and that some form of vegetable food must be used in order to furnish enough nucleo-albumins. He excludes a number of things, however, that are often advised, such as cooked or raw fruits, sweets and pastry of all kinds, onions, turnips, parsnips, potatoes, carrots, celery, radishes, cabbage, egg and oyster plant, corn, etc., rich gravies and soups of all kinds, and gives a reason for each of these exclusions. The use of a little dilute hydrochloric acid may be of assistance to the digestion, and he also advises a few grains of inspissated oxgall three times a day before eating. When the liver is performing its functions abnormally and the tissues are stained with bile, mercurials are of value. Constipation should be met with some laxative that acts according to the normal plan of Nature. He advises strychnin and caffein for intensifying nerve-innervation.

13. **Syphilis.**—Friend concludes that, without regard to system, organ or tissues affected, and irrespective of the period of syphilitic infection, all specific lesions begin in the arteries; that the special pathology of syphilis is in a disease of the arterial walls, and that this disease bears the same relation to syphilis as does the affection of Peyer's glands in the intestine to typhoid fever; the disease of the skin in smallpox, etc. On the basis of this theory, he thinks that "reclining rest" is the proper routine treatment during the first part of the constitutional stage of this disease, as the ambulatory treatment produces aggravation of arterial symptoms.

16. **Conditions Simulating Appendicitis.**—Among these, Janeway recognizes neuralgia, affecting the lower abdominal nerves of the right side, and certain conditions of the kidney, such as renal colic, intermittent hydronephrosis and movable kidney. Cholecystitis also has been found as a cause of the trouble, and certain conditions in the intestinal tract, such as ulceration or narrowing of the hepatic flexure of the colon. Typhoid fever complications have led to an operation for appendicitis, as have also those connected with follicular tonsillitis. Still other conditions mentioned are abscess of the ovary, retained menstrual fluid, retroperitoneal abscess and hypochondria.

17. **Rupture of the Uterus.**—Wendel remarks that rupture of the uterus is considered a very rare accident, but it probably occurs much more commonly than is supposed. He reports several cases and considers the methods for its prevention. His résumé is that in threatened rupture, delivery should be accomplished at once by the method which does not increase the excessive intrauterine tension, and delivery by the natural passages is permitted only if it does not aggravate the existing injury. If the true conjugate diameter measures less than 8 cm., a completely intraperitoneal fetus should be delivered by abdominal section, but if it exceeds this, the uterus should be removed by vaginal hysterectomy and the child delivered by the feet in the natural way. If the child is alive after the death of the mother, post-mortem section should be performed. The uterine tamponade is useful only as a dressing to prevent intestinal prolapse, or to retain reposited loops of intestine within the abdomen until the case can be operated on. Conservative surgery risks subsequent rupture and should not be chosen unless it is expressly desired by the patient or immediate relatives. Vaginal suture is objectionable from the possibility of overlooking the bleeding arteries in the parametrium. When laparotomy is required, the uterus is to be removed by supravaginal amputation with extra- or intra-peritoneal treatment of the stump according to the needs of the case or the ability of the operator. Vaginal hysterectomy is the elective procedure in all cases. It should be supplemented by abdominal section whenever necessary.

18. **Loss of Hair.**—From a study of 300 cases which are analyzed, Jackson concludes that loss of hair is more common in men than in women, and in married than unmarried people. He believes that the majority of those losing their hair, follow indoor occupations, which associated with worry or nerve strain, is a predisposing, if not the determining, cause of baldness. The great majority of cases begin before the 30th year. In women the loss of hair takes the form of general thinning, while in men the whole top of the head is commonly affected. As to the cause outside of febrile disease, he thinks heredity is first, and dandruff one of the most common exciting causes. In absolute baldness when the scalp is atrophied and bound down there is little use in trying to do anything. Massage is one of the best methods of stimulating the scalp, and this is done best by a skilful masseur, but the patient can do much by pinching up the scalp between the ends of the fingers. His own method of treatment is attention to the general condition of the patient. When this is good, the patient is given a little sulphur ointment with the directions to use it once a day for three days and then wash the hair and scalp. Immediately after this the hair is dried and an ointment is applied and repeated every other day for ten days. The scalp is then washed again and the ointment continued two or three times a week until the dandruff is controlled, the washing being repeated from time to time. If the patient will not use ointment his resort is to a lotion of resorcin, at first 3 and afterward 5 and 10 per cent. strength, morning and night. If the sulphur is used in the form of what his druggists calls "sulphur cream," it is not so troublesome, being used but twice a week or so. In cases of loss of hair without any apparent trouble with the scalp, massage is the best treatment.

20. **Artificial Nauheim Baths.**—Mayer describes his method of making artificial Nauheim baths with acid sulphate sodium and bicarbonate of sodium. He uses six or eight cakes, two ounces each, of the former, and two pounds of the latter to the bath; or the saline mixture of sodium chlorid, 30 pounds, potassium chlorid, 10 ounces; granular calcium chlorid, 30 ounces; magnesium chlorid, 8 ounces, thoroughly mixed and kept in a moist-proof tin box until needed. He first uses 3 pounds of the above with bicarbonate until it is thoroughly effervescing. He relates his own experience with the baths, and thinks the artificial like the natural ones, together with the resisting exercises, are the most efficacious and lasting remedy for chronic disease of the heart.

22. **Army Ration in the Tropics.**—In his concluding article, Munson says that fats are needed less in the tropics, and that over-stimulation of the liver is a result of their ingestion to an undue extent. The ratio of fats to carbohydrates must be reduced from about 1 to 5.5 to 1 to 10 at least. The ingestion of carbohydrates in a greater quantity than is required is much less injurious than an excess of proteids or fats, though it also has its disadvantages. He does not, however, believe in a very great reduction and would allow about 380 grains of carbon not including the carbon required in the formation of urea, for energy. He publishes several tables of dietaries suitable for active and garrison duty, the mean of which gives carbon 358 grams and the proportion of nitrogen to carbon 1 to 29. The rotation of these diets, which is given in detail, would probably meet all the indications as they arise. The changes that are advisable are made chiefly in the line of reduction in the quantity of food; sugar and starches only being slightly augmented, but their increase is small compared with the considerable reduction of nitrogen and fatty material. Many of the components of the present ration require no change, being not only admirably selected, but also properly

roportioned. See also abstract in THE JOURNAL of June 2, ¶ 1, 1435.

23.—This article has appeared elsewhere; see abstract in HE JOURNAL of June 2, ¶ 100, p. 1439; also see title 99, in is issue.

24. **Cystitis Papillomatosa.**—This condition is a form of stitis, characterized by the usual symptoms of either catarhal or suppurative forms—frequency of urination with more lesspain and tenesmus, the urine passed being clear or turbid, bleeding does not occur spontaneously. The seat of the disder is at the trigone, which it usually covers, and it may volve the urethra. Its villi, or papillæ, spring from an inamed base and are discrete. When in doubt as to the conition, Bierhoff uses the ureter cystoscope, armed with a atheter, which is laid on the inflamed surface; the window of he ureter cystoscope lying directly over and close to it, the atheter will at once sink into the mass of papillæ or pass beween them if this condition exists. He reports several cases nd discusses the differential diagnosis; the treatment is erely mentioned.

25. **Medicinal and Non-Medicinal Remedies.**—Page aludes to the tendency to overtreat disease, and thinks there is omuch said about the treatment with drugs alone and that we hould lay special stress on other methods. If he were rericted to only one method he would adopt hydrotherapy for he treatment of all diseases, and drugs alone would be his st choice. He says it is a fault of our medical education hat we give so little attention to hydrotherapy and massage, nd that these are in their way even more important therapeutically than drugs.

26. **Organotherapy.**—Thelberg remarks on the theories of rgantherapy, with special reference to testicular extent. e notices briefly some of the literature and describes two ases, one of tabes and one of paralysis agitans, in which ermin appeared to have a very good effect.

27.—See abstract in THE JOURNAL of February 10, p. 361.

31. **Sudden Death.**—The conditions of sudden death are oticed by Schwab, who says he is inclined to follow Brouardel n his opinion that toxins from disordered kidneys are more mportant in this regard than heart disease, which is so comonly given as the cause, especially in alcoholic cases. Sometimes a slight trauma may be the cause, and there may be nrecognized conditions of great gravity during life which will ccount for the unexplained fatalities in operations and under ther circumstances.

33. **Dental Caries in Children.**—DeVoe urges more care on he part of the physician as to this matter. He believes that edical inspection of schools should practically include attenion to the children's teeth.

35. **Therapeutic Serums.**—Fanoni has used Pane's antipneumonic serum in eighteen cases of pneumonia, four of hich were in children under 3 years of age. The serum, when njected early enough and in sufficient quantity, if not deteriorted by age, quickly produces a lowering of the temperature nd improvement and hastens resolution. The quantity used y him is 40 c.c. of No. 2 daily. He has used Marmorek's erum with partial success in two cases of puerperal infection. nother that he has found of value is Maragliano's antituberculous serum, which he used in his private practice nd thinks is the only scientific remedy we possess for the reatment of this disease. It will give valuable help in inipient cases where there is no mixed infection. Patients, fter its use, sometimes become immune to very large doses f tuberculin—ten times more than the initial dose ordinarily iven.

44. **Relation of Age, Physique and Preliminary Training to Class Rank in Medical Students.**—McGrath has examined the students of Harvard Medical College to ascertain he standing in scholarship according to age, weight and preliminary training. He found that students varying widely in he grade of scholarship present no marked difference in weight, hough the lower grades average slightly heavier than the others, but vary widely in age and preparation. Students differing widely in age differ little in weight, and to a great extent in preparation and ability in scholarship. Those varying to a marked degree in weight show little difference in scholarship or preparation. The most important factor in the the scholarship appears to be the preliminary training and, to some extent, the age.

45. **Diphtheria Bacilli in Healthy Individuals.**—In cultures from the mouths of 285 healthy individuals at the Brookline Board of Health's laboratory there were found but 7 with the bacillus of diphtheria, 4 of these were adults who had some connection or association with an epidemic of diphtheria, and the other 3 were school children, 2 of these from a class where there had been a slight outbreak, and the other from a child who had no known connection with any case of diphtheria. All of these individuals were perfectly healthy. In 190 healthy boys in a municipal school for truants there had been a slight epidemic involving 10 of the pupils just before the cultures were made, and in 16 of these the diphtheria bacilli were found. The conclusions of the whole research are summed up by Denny as follows: Diphtheria bacilli are seldom found—except where there has been great exposure—in the throats of healthy individuals, living under good hygienic conditions. A large number of persons may be infected by healthy individuals who have the bacilli in their throats. The condition of institute-life, which favors the growth of virulent bacilli in healthy throats is the living together of a large number of persons in a limited airspace.

48. **Influence of Cold on Typhoid Bacilli.**—Prudden had shown that water in freezing becomes partially purified, and more recently Sedgwick pointed out that this purification excludes nearly 90 per cent. of the bacilli. Prudden found in one week that 80 per cent. of the typhoid bacilli were killed in frozen water; in ten weeks, 9 per cent.; and in fifteen weeks, 99.9 per cent. About 99 per cent. were killed in two weeks with repeated freezing and thawing. Park has repeated Prudden and Sedgwick's experiments and found that in one-half of a week, 42 per cent. were left; in one week, 14 per cent.; in two weeks 7.5 per cent.; in three weeks .4 per cent.; in five weeks, .11 per cent.; and in twelve weeks only .05 per cent. He has not as yet carried his experiments beyond twelve weeks, and can not say when all living bacilli would cease to exist in the specimens of ice from the most resisting cultures. In twelve weeks the bacilli in the ice from 9 sources were all dead. No one of the twenty cultures made were more resistant than Prudden's test culture. When typhoid bacilli are in feces, freezing does not have so much effect. Thus typhoid and colon bacilli, originally 37,000 to a loopful of feces, were still 12,000 at the end of five weeks' exposure to a temperature ranging daily between zero and 28 F. Fecal material from typhoid patients that is thrown out without disinfection in winter and frozen might easily stay infected until spring and the bacilli be carried a considerable distance after thawing. It is a difficult matter to say how long ice from infected water remains dangerous, and Park thinks we should discourage its use from possible infected waters unless it has been frozen for at least five months. After midsummer, he thinks we could rule out ice infection almost absolutely. He made an experiment to see the effect of low temperatures, which he thinks has been somewhat exaggerated. Ten tubes containing 10 specimens of ice infected with typhoid bacilli from different sources, after being frozen two weeks, were put in an ice-box at 52 F. for two weeks, and 10 duplicate tubes were left at 10 to 20 degrees. There were less left living at the end of seven weeks of those at 52 than in those left frozen at 10 to 20 degrees. Again, typhoid bacilli placed in liquid air for three hours showed a large percentage still living. At a temperature of 70 F. typhoid bacilli in filtered water frequently held their own or increased for a few days and, at the end of five weeks, 2 out of 10 cultures still contained 50 per cent. of their number. He was not able to confirm Prudden's experiments showing that dry cold is less injurious than moist cold.

50.—See editorial in THE JOURNAL of May 26, p. 1348.

55. **How to Deal with the Insane.**—Runge's paper discusses a number of subjects, including the detention in asylums, which he says is not a hardship for the majority of those thus confined. He also states that he has never found cases of illegal detention. The incompetence of jurors who sit on cases of insanity is also referred to, as well as the well-worn subject of medical expert testimony, and the present methods condemned.

57. **Care of Recent Cases of Insanity.**—According to Burr, the hospital treatment of recent cases of insanity by rest in bed and constant attendance of a trained nurse is most advisable. Friends and relatives should be excluded, as a rule. Special attention should be given to excretions, more particularly those of the bowels. The application of ice-caps and cold packs may be of use, but he has had little experience with the latter, though it was of distinct service in a case of mania. He condemns remedies directed to subduing the patient, as it is not curative to restrain the activity by means of drugs. Sleep should be secured, if possible without drugs, but if necessary, hydrate of chloral or other hypnotics may be employed. He does not exclude the use of exercise by the bed treatment, and thinks that tonic remedies are advisable, as are also stimulants in the exhaustive conditions. He has never had much confidence in cannabis indica in the depressed states, and for various reasons never prescribes opiates. Electricity, in the form of electric massage, is especially mentioned, and also what he calls "the salt glow," which consists in a sort of salt bath with rubbing. Special directions are given as to diet and methods to induce patients to eat. Artificial feeding may be employed as a final resource, but special care should be taken to avoid accidents. He does not advise change of scene for the neurasthenic and depressed patients; travel has a very narrow range of usefulness.

60.—See abstract in THE JOURNAL of March 10, p. 623.

63.—See abstract in THE JOURNAL of March 24, p. 749.

64.—Ibid., April 21, p. 1005.

69 and 70. **Amaurotic Family Idiocy.**—Patrick reports a case of amaurotic family idiocy, which is of interest because it did not occur in a Jew, as is usually the rule. Another case is reported by Kuh, who thinks that the conditions indicate something more than simple arrest of development; there appears to be a distinctly retrogressive and destructive change.

71. **The Fundus Oculi in Amaurotic Idiocy.**—This, as described by Beard, is characteristic and unique. The disc is unusually clear, though there is no pronounced atrophy of the optic nerves, but the really characteristic features observed are around the yellow spot which is the center of a liver-colored disc. This is surrounded by a zone of grayish white, which extends for at least two disc diameters, horizontally and somewhat less vertically, gradually fading away into the normal red-orange of the eye ground. The livid disc is clear-cut and distinct, is larger than the fovea, marking all that space which is devoid of the ganglion cells. Another more distinguishing feature is the character of the white zone surrounding the center, which is nearly white at the circumference of the liver-colored disc, then gradually thins away to nothing.

84. **Luxation of Lens and Zonular Cataract.**—Weyman, from his observation and experience, concludes that in the vast majority of cases spontaneous lenticular dislocation is due to the same causes that produce zonular cataract. Zonular cataractous degeneration is only one of the congenital defects—myopia, weakness of the zonula of Zinn, etc. All or most of these may be present when the cataract is lacking and the spontaneous luxation of the lens surrounded by its capsule does not, of necessity, nor usually, develop a cloudy zone. If such is found, it should not be attributed to the dislocation for a lens disturbed in its trophic relations usually degenerates locally at the point of capsular injury or irritation, or totally. Riordon and Jaeger have reported cases of capsular dislocation retaining perfect transparency for many years after. Luxation into the anterior chamber should be attended to at once as it is likely to cause injury to the cornea and iritis. Though extraction is the ideal proceeding, it should be abandoned in favor of reduction into the vitreous in the presence of the following conditions: 1. When the other eye is practically unserviceable and the extraction unduly dangerous. 2. When the lens has without irritation, before resided back of the pupil. With a loose iris, he believes discission the best and safest plan.

88. **Unusual Complications Following Operation for Orbital Lipoma.**—Würdemann reports a case in which, after removal of the orbital lipoma, there was total traumatic ophthalmoplegia externa, with partial atrophy of the optic nerve, due to pressure of a hematoma of the orbit following operation.

94. **Vaginal Route for Pelvic Operations.**—As to the method of operating in pelvic disorders, Campbell prefers the vaginal route in most cases and suggests a modification of Trendelenburg's position as of advantage in this. In the ordinary position, the possibility of infection of the abdomen from drippings from the pelvis is to be considered. He, therefore, has arranged that after the patient has been in the Trendelenburg position and remained there eight or ten minutes, she is then drawn six inches higher on the table, the pelvis now resting on a level plane six inches wide. The intestines will have gravitated before the patient was moved, and in the modified position the operator works downward in the pelvis and the pus is more easily removed, with less danger of its gaining entrance to the peritoneal cavity.

95. **Studies in Epilepsy.**—*Exhaustion-Paralysis in Epilepsy.*—By this Clark means that occurring as a result of convulsive attacks. He reviews the literature thoroughly and gives his personal observations, concluding: 1. The theory of exhaustion-paralysis is conclusively proved by physiologic experimentation and especially by pathologic data derived from the observation of phenomena in epilepsy. 2. Exhaustion-paralysis is localized to parts participating in the local spasms, or confined to those parts most convulsed in general seizures. Although there may appear to be exceptions to this general rule, such cases will always be found to follow it, if carefully observed. 3. The temporary paralysis may become permanent and exists as a true hemiplegia with organic changes of a varied nature. 4. It is not necessary to invoke any other state than exhaustion to explain the temporary paralysis in epilepsy. 5. Temporary exhaustion-paralysis is essentially an exhaustion of cerebral centers, and the apparent severity of muscular convulsions is not a fair index to the amount of paralysis that may follow. 6. True exhaustion cases independent of infantile palsy affections are not common. The differential diagnosis of the two lesions or states is extremely difficult but most important, because the exhaustion cases, independent of organic lesions, help to bridge over the wide breach existing between so-called Jacksonian epilepsy and idiopathic epilepsy. 7. Researches on the disorders of motility, which partake of the nature of exhaustive phenomena following convulsions, as seen in epilepties, seem to suggest some noteworthy points; among them, that the degenerative process of exhaustion-paralysis, as manifested in epilepsy, is closely allied to that of ordinary paralytic states. Due allowance should be made for the fact that the epileptic brain is, in the majority of cases, much incapacitated. We should not charge to the epileptic as a cause more than that which may be due to previous disability of the motor centers. He alludes to the suggestion of epileptic paralytic foci in the brain and supports it by the fact of the localized anæmias and the minute patches of softening or sclerosis so often found. He calls attention to the inadequacy of treatment by passive movement or massage in epileptic paralysis. *Paramyoclonus Multiplex and Epilepsy.*—Clark's second paper reports a case with a discussion of the literature of paramyoclonus, which he thinks is the only one thus associated that has been reported by English or American observers. He considers it rather surprising that we do not see this condition more frequently associated with epilepsy. *Hypertrophic Infantile Cerebral Palsy and Epilepsy.*—He also reports two cases of infantile cerebral palsy and phocomelus, and rejects the theory of athetosis causing the condition, though he offers none to take its place.

98. **Changes in the Optic Chiasm Produced by Acromegalia.**—Holden describes the results of the examinations of three cases of distorted chiasm in acromegaly, and notes the

gross changes that may occur in this condition as follows: The posterior portion of the chiasm is compressed by the pituitary body. Following this, the posterior and middle portions of the chiasm are flattened and forced upward, and thus separated from the anterior portion, which is protected by the bone beneath it. Later, with this tilting upward of the chiasm posteriorly and the forcing forward of the anterior wall of the pituitary fossa, the anterior portion of the chiasm is encroached on by the pituitary body and arched directly forward. Finally the chiasm may be severed completely. He has studied the atrophy of the optic nerves in these cases and points out the changes which should occur in the visual field. In the cases of acromegaly in the literature, visual disturbance has been noted in about one-half of them and in the other 50 per cent. there has been concentric contraction of the visual field with diminution of central acuteness of vision, and in somewhat less than one-half, bitemporal hemianopsia, absolute or for colors only, with or without some contraction of the nasal halves of the field; in six cases there has been homonymous hemianopsia, absolute or for colors, only, and in one case there was found binasal hemianopsia. The type of the contraction of the field may change with enlargement of the pituitary body. Homonymous hemianopsia from pressure on one tract will become complete with involvement of the chiasm, and the bitemporal hemianopsia may also lose the nasal field in a similar way. The visual disturbances in acromegaly usually appear late in the disease though there is no rule as to their course.

99.—See ¶ 23, above.

108. **Children of the Female Inebriate.**—From a study of the subject, Sullivan concludes that maternal inebriety is a condition peculiarly noxious to the normal development of the offspring. While its influences, measured by the test of infant mortality, are to a considerable extent through deterioration of the *milieu*, in a large number of cases it also depends on the primary action of the poison. The reality of this last is shown by the tendency to still-births and abortions, by the frequency of epilepsy in the surviving children, by the prevalent mode of death and by the effects of modifications of the intoxication. This primary action of alcohol is due, in part, to the effects of the poison on the maternal organisms; and, in part, to a direct toxic action on the embryo from excesses during pregnancy. The first of these modes is, by its nature, permanent with a tendency to increase; the second, while also tending to increase, is susceptible of modification. The tendency of the family with alcohol maternity is toward a type the inverse of the syphilitic family, thus the first-born children are normal, then come more or less defective ones who live beyond infancy, then those dying in infancy, and lastly still-births and abortions. The deviations from this type are probably due to oscillations in the tendency of the second mode of influence.

112.—See abstract in THE JOURNAL of May 5, p. 1129.

120.—See abstract in THE JOURNAL of May 12, p. 1195.

121. **Varieties of Appendicitis.**—Middleton divides cases of appendicitis into: 1. Catarrhal conditions confined practically to mild attacks which pass into a chronic form or into the secondary class. 2. The suppurative cases. 3. The perforative one, which is simply the continuation of the suppurative. 4. One that he calls the gangrenous form, which is proportionately rare and includes many of the fulminant cases. The chronic form is the condition associated with recurrent attacks. He believes operative interference the best method of managing these cases.

123. **Hot-Air Treatment.**—Moyer found the hot-air treatment of value in a number of nervous and joint affections. The apparatus as made in this country has not been satisfactory and he had one made to suit himself, which was readily and simply constructed of ordinary galvanized iron. The most useful temperature he found to be 350 F.; lower than this he did not get any of the alterative effects which are the chief characteristics of the treatment. The idiosynerasy must be regarded, as some persons burn easily even with comparatively low temperatures. In a number of cases of joint trouble following rheumatism, traumatisms and chronic synovitis with adhesions in the joint, the results were exceedingly satisfactory but not much benefit was derived in arthritis deformans. He thinks the value of this treatment is most marked in those cases of peripheral neuritis accompanied with joint lesions, and that it will be of advantage in many cases of sciatica accompanied with the so-called bloodless stretching of the sciatic nerve.

134. **Bacillus Aerogenes Capsulatus.**—Page reports a case of perforating gastric ulcer with infection by this germ and discusses the literature of the subject. He thinks that it is probably a constant inhabitant of the alimentary tract and, in conditions of lowered resistance may produce serious trouble.

140.—See abstract in THE JOURNAL of May 12, p. 1194.

141.—See abstract in THE JOURNAL of May 12, p. 1195.

155. **Infectious Diseases of the Cornea.**—The practical points of Briggs' paper are brought out in the following: 1. All corneal infection, in the absence of constitutional disease, comes from without and gains entrance through some lesion of the epithelium. Every corneal wound should therefore be thoroughly cleansed with a mild antiseptic solution and an antiseptic compress applied. 2. Injuries of the cornea are especially dangerous in the presence of suppurative disease of the conjunctiva or lacrimal sac. Active measures must at once be taken to render the wound antiseptic and to prevent new infection. 3. When infection of a corneal wound has become established the active focus should be treated with stronger antiseptics. In grave cases the galvanocautery offers the most efficient means. 4. When patients complain of having "taken cold" in the eye, that organ should be carefully examined for foreign bodies and corneal abrasions, the most minute being readily detected by the introduction of fluorescein solution. Sulphate of zinc or other irritants should never be prescribed until the existence of a wound has been positively excluded.

157. **Eye Injuries Due to Sunstroke.**—McKee reports two cases of central scotoma, due to sunstroke, associated with photophobia and pains. The pathologic conditions did not correspond to the severity of the symptom.

168. **Sulphonal Poisoning.**—Zeigler reports a case of a girl who took, as nearly as can be estimated, about 125 grains of sulphonal at one dose, at 10:30 p.m., April 27, and was seen the next morning, but, knowing that she had taken a hypnotic, was not disturbed until 11:30 p.m., when she again fell asleep and could not be awakened until 11 o'clock the next morning. When momentarily aroused, her mind was in a confused conditions, frequency of respirations and pulse increasing, and anesthesia became complete, until finally artificial respiration was required. She was given strychnin, 1/50 gr., every three hours, and later, g'conin, 1/250 gr., two doses altogether. At 7:30 a.m., April 30, the third day after taking the dose, she awoke naturally, and while there was some ataxia for a short time she seemed completely well on the third day of her convalescence. The urine was scanty through the entire period, averaging but four ounces during the twenty-four hours, its specific gravity ranging from 1028 to 1034; no albumin; no sugar. Nourishment was given her by enemas during the three days of her trouble.

172.—See abstract in THE JOURNAL of April 14, p. 934.

FOREIGN.

British Medical Journal, May 19.

Small-Bore Rifle Bullet Wound and the "Humanity" of the Present War. CLINTON T. DENT.—The writer reviews the experience of the present war in the Transvaal, and claims that the "humanity" of modern war must be tested by the question whether such septic disorders as pyemia, septicemia, gangrene, erysipelas, etc., are present or absent. These are preventable and thus far in the Transvaal War he has not seen them. He specially praises the commissariat and transport, but admits that the climate has been the strongest point in favor of the English in this war. Pure sunlight and air have done more for the wounded in this war than seems to be generally acknowledged, and if too much is trusted to this experience there may be a terrible awakening when a war has to be carried on under more unfavorable surroundings.

Plague in the Lower Animals. FRANK G. CLEMOW.—The author finds that while dogs are probably liable to plague under natural conditions, they have not yet been proved to play much part in its spread. In inoculation cases they are found quite refractory. Cats fall under the same general head as dogs in this respect. They are very slightly susceptible either in nature or in the laboratory, and can not be considered as assisting in the spread of the disease. In view of their fondness for rats it is fortunate that this is the case. Jackals are said in China to contract plague, but positive proof seems to be wanting. Of the Ungulata, the horse appears to escape infection under the natural conditions; this being the animal employed in the preparation of curative plague serum, the symptoms produced by inoculation have been thoroughly described. It would seem that pigs have a low susceptibility to the virus, but are probably of little importance as agents in spreading the plague. The same may be said of sheep. Goats seem to be somewhat more susceptible and there has been an increased mortality among them in Bombay during the epidemic. Cattle are scarcely at all susceptible and play no part in the multiplication of the disorder. Birds are refractory. It can hardly be seriously claimed that plague is spread by any members of the group of reptiles or fishes. The only invertebrates observed or believed to carry the infection are insects, but whether their agency is as important as some have claimed must for the present be considered open to doubt.

The Lancet, May 19.

Modern Treatment of Diabetes Mellitus. ROBERT SAUNDBY.—Under normal conditions the liver stores up in the form of glycogen, carbohydrate material, taken into the body as food, and by means of its regulating mechanism converts this into sugar and passes it into the circulation in such quantities as needed. Under abnormal conditions, the liver no longer stores up glycogen, but allows the whole of the carbohydrate food to pass at once into the circulation as sugar, while any stored glycogen is at once converted and discharged. These abnormal conditions may be produced by certain traumatisms, shock, etc., especially by the puncture of the fourth ventricle, Claude Bernard's noted experiment. These facts, however, do not explain the pathology of diabetes, the disease in which the excretion of sugar goes on often without regard to the ingestion of carbohydrates or the amount of glycogen stored. Pavy has shown that the albuminous molecule splits off into a carbohydrate molecule from which sugar has formed, thus partially explaining the above fact, but we have to still postulate a further failure of the sugar-destroying function of the tissues in diabetes. It appears, therefore, that under interference of certain agencies the liver loses its power of storing up glycogen, the tissues, therefore, gorged with sugar, lose their power to consume that substance and glycosuria results. In the pathogenesis the nervous system undoubtedly takes part, and the author finds from his examinations that A. H. Smith's theory of anxiety producing this condition in undue frequency among railway employees has some support from facts. Pancreatic disease has also been known to produce diabetes, though this is not invariably the case. Its physiologic relation to the glycogenic function of the liver remains to be elucidated. The theory provisionally accepted is that the pancreas forms an internal secretion which prevents the discharge of glycogen from the liver. The relation of diabetes to a definite hepatic lesion is as yet not satisfactorily established, and the condition described by Hanot as "bronzed diabetes" is probably a peculiar form of cirrhosis associated with glycosuria rather than a complication of diabetes. Saundby considers it probable, however, that there is a class of cases to which the term "hepatic diabetes" could be provisionally applied. We must not be content to call every case of glycosuria, diabetes, and put it on routine treatment; our opinion must often be suspended and the case studied. He warns that the reduction of copper does not necessarily mean sugar. Unfortunately the cases are common enough in which the diagnosis is plain. The remainder of the paper is given to the subject of treatment, mainly dietetic, and he gives tables of diets, with their heat and carbohydrate equivalents. He does not believe in sending advanced cases to distant health resorts. Exercise must be very moderately indulged in, as fatigue is often fatal.

Summer Diarrhea, with Special Relation to Causation and Prevention. F. J. WALDO.—Summer diarrhea in infants is held by Waldo to be probably due to multiple infection, though our knowledge in regard to this point is still very defective. He is inclined to think the disease is communicable under certain conditions, but it is hardly possible that the chief cause lies in the transmission direct from one patient to another, but rather in the existence of a common contagion. He considers contagion very likely due to street dust and mud, but there are many difficulties in the investigation of this subject.

Clinical Study of Causes of the First Sound of the Heart. ALEXANDER MORISON.—From a study of the question Morison concludes that the impulse given to the blood by the muscular action of the heart in it and in the vibrating structures containing it, gives rise to vibrations of a certain quality which result in that tone which is synchronous with the cardiac systoles usually called the first sound of the heart. The largest share in this result must be attributed to vibration in the blood itself, to produce which, at normal rate, valvular support of the vibrating blood-columns is necessary. This conclusion, based on clinical observation, is essentially the same as that of Leared, but Morison disagrees with him when he says that "the events which occur in the ventricles and at the arterial orifices have no more to do with the generation of the sounds than 'the vibration of a door [has] with the sound produced by the air [passing] through its keyhole.'" There is a difference, he says, in the noise made by a door slammed to and one pushed open. The former represents the second, the latter the first sound of the heart, and in both the character and distribution of the vibrations differ.

Some Cases Showing the Use of "Gas and Oxygen" as an Anesthetic in Certain Ophthalmic Operations. W. J. MCBRIDE.—The author reports several cases of ophthalmic operations under the use of gas and oxygen, the advantages of which he states as follows: 1. The almost absolute safety of the mixture, which is the safest anesthetic known. 2. The rapid induction of anesthesia, the patient being under in less than two minutes. 3. The induction is without incident and the maintenance in the best cases is quite sleeplike; while full recovery occurs in less than two minutes. 4. The absence of after-effects, the patient being able to leave the room in a very few minutes. 5. The eyeball is fixed, the orbicularis muscle is relaxed and congestion can be entirely avoided by the allowance of sufficient oxygen, while there is no retching, sickness, cough, straining, or unconscious after-movements causing increased intra-ocular vascular tension. 6. The upright chair or semi-recumbent position on a couch can be conveniently and safely assumed. This method of anesthetization is, for several of the above given reasons, admirably adopted for consulting-room work.

Annales de Dermatologie (Paris), April.

Clinical and Bacteriologic Study of Impetigo. R. SABOURAUD.—The first division of this work was summarized in THE JOURNAL, April 28, p. 1062. In it Sabouraud announced that impetigo is the keystone of dermatology and that it has two fundamental varieties, the impetigo of Tlibury Fox and the impetigo of Bockhart. He then proceeded to establish that the former is the work of the streptococcus; now he states that the latter is due exclusively to the staphylococcus aureus. These two infections, the streptococcic and the staphylococcic, have each their immense train of immediate derivatives; the microbian origin remains the same, but they owe their different names to some detail in their seat or their structure. With their combinations and their mixed forms which disguise and transform them; with the superposed secondary infections which rapidly alter their special characteristics; with their "clinical manners" variable from one subject to another; with their chronic forms swamped in the multitude of eczematiform dermites; . . . . .' "the two infections, the staphylococcic and the streptococcic, are the center and the nucleus of cutaneous bacteriology." All study of microbian dermatology should commence with them, and in them is the key to the still unsolved general problems of dermatology. Each of these two infections has its acute, distinct and regular type. The impetigo of Bockart is characterized by its periostio-follicular localization, its suppuration from the start, its comparatively difficult effraction, its desiccation and exfolia-

tion in the form of a scab which comprehends the dead lesion in its totality, and the peripilar cicatrix it leaves behind. Anatomically it is characterized by being crowded with leucocytes, by loosening the epidermis through which it forms, being centered by a hair and by showing more or less extensive necrosis of the skin in the depth of the lesion. The microbe is invariably the staphylococcus and it is always massed in the "cupola" of the pustule and in the follicular chimney around the hair. It is the same morbid entity, whether originating spontaneously or consecutive to a physical or chemical traumatism. The staphylococcus does not allow any other microbe to invade the lesions which it determines, unlike the streptococcus, which seems to welcome other micro-organsms. The chronic form is a pustular miliary dermatitis while that of the phlyctenular impetigo of T. Fox is a dermatitis with exudation and later lichenization. "The coincidence of these two infections in varying proportions and with varying localizations, according to the regions involved and the individual case, generates the complexus on which the clinic has bestowed the name of "chronic eczema." The syndrome of chronic eczematization is in reality nothing but the simultaneous occurrence of the staphylococcic and the streptococcic infection. In their acute form each bears the seal of an affection derived from without and contagious. Each can be reinoculated indefinitely on the bearer and the persons in his environment. In their chronic form each obeys the inexorable law that a cutaneous affection of extraneous origin becomes progressively acclimated to the bearer. In this stage they assume an apparently endogenic form and become torpid and permanent. No infection is more distinctly exogenous, in fact, more autonomous, more typical, more cyclic, more limited in its acute form. None is more permanent, more endogenous in appearance, more incorporated into the individual, nor more confused in the maze of its local complications and secondary infections after it has once assumed the chronic form.

Bulletin de l'Academie de Medecine (Paris), May 1 and 8.

Cure of Myopia Without Operation. PANAS.—A young student was exhibited five years ago by Panas, as an example of the fine results attained by removing the crystalline lens in the treatment of myopia. There were no lesions in the choroid, but the myopia had been 13 and 22 D. After the operation he only required glasses for +1D., to neutralize his postoperative astigmatism. Six months later progressive lesions appeared in the choroid, terminating in complete detachment of the retina and total blindness in both eyes. Panas believes that similar accidents are more common than would be supposed from the published statistics, as they occur so late. He also calls attention to the appearance of the choroid lesions consecutive to the operation. For these reasons he has been particularly interested in an observation related by Bettremieux of Roubaix, which he quotes in full. A lad of 14, with progressively increasing myopia, 4 and 5 D., was treated for five months with repeated instillations of a pilocarpin collyrium, supplemented by a compressing cotton bandage applied at night. With no interruption in his studies, the myopia diminished with this simple treatment to 3.50 and 2.75 D., explainable by the decreased anteroposterior axis of the eyeball under the influence of the myotic and the compression.

Bulletin Medical (Paris), April 28.

Symphyseotomy Without Immobilization. G. FIEUX.—After extracting the child, the sutured wound is varnished with a double coat of traumaticin, with no other dressing but the usual abdominal bandage. Reunion is perfect and the patient able to be up on the sixteenth day; two thus treated recovered rapidly with no after-effects, and Fieux now proposes in future operations to leave a small gap to facilitate future deliveries, as he has established that the pelvis and its contents will not suffer.

Semaine Medicale (Paris), May 10.

Diagnosis of Rabies. VAN GEHUCHTEN.—It is evident, from the experiences related, that experimental rabies differs from the natural not only in the symptoms and course, but also in the intensity of the lesions it induces. This explains the contradictory testimony of Nocard, Babes and others in regard to the ganglionary lesions described by Van Gehuchten (see THE JOURNAL, May 26, p. 1368), which are only specific for natural rabies and not pronounced until an advanced stage. He considers the symptoms presented by the rabid animal merely the consequence of the ganglionary lesions, and the disposition to bite, a manifestation of the nervous agitation resulting from the turgescence and incipient proliferation of the pericellular capsule. He insists on a more vigorous campaign against vagrant dogs, and recommends that one suspected of rabies—who has bitten a person—should not be killed at once, but the disease be allowed to run its brief course in order to confirm the diagnosis. In future the diagnosis of rabies can be made from the ganglionary lesions, and inoculations will only be needed in case of negative histologic findings.

Technique and Results of Subarachnoid. Cocain Anesthesia. T. TUFFIER.—Sixty-three operations have been performed by Tuffier or his assistants, on the perineum, rectum, abdomen, urogenital organs and inferior members, including vaginal hysterectomy, nephrectomy, excision of the rectum, etc., with anesthesia that was induced exclusively by a fresh, sterile, 2 per cent. solution of cocain injected into the subarachnoid space at the fifth lumbar vertebra, on a line level with the margin of the iliac crests. In four to ten minutes the patient feels a prickling, tingling and numbness in the feet and legs, and then the operation can be commenced at once, as sensibility to pain and heat is abolished, although sensibility to contact is retained. The analgesia is complete, absolute, and may extend to the axillæ. In one case the patient lifted the stump after amputation of the thigh, to facilitate ligating the vessels. Another listened to the sawing of his femur, but remarked that he could not tell whether it was his leg or the leg of the table that was being sawed. Another, after her kidney had been removed, inquired when the operation was going to begin. Very few consent to be blindfolded. This analgesia lasts from sixty to ninety minutes. The position does not affect the sensibility. No serious accidents have occurred; there was merely a sensation of oppression in the epigastrium, a little nausea and vomiting, sometimes at the time of the injection, but usually not until after a few hours, then it is slight and yields at once to the ingestion of ice. These accidents were noted fifty times in the sixty-three operations. Cephalalgia was more frequent, but was merely a slight heaviness in the head in two-thirds of the cases. In a few it was more severe and kept the patient awake all night, lasting for forty-eight hours. Sweat, dilation of the pupils, tremor of the limbs and acceleration of the pulse were also occasionally noted, but all without the slightest gravity, vanishing within an hour. The temperature also rose in 15 cases, without operative complications, in 1 to 40 C., but returned to normal by the next day, and in 4 a chill for a few minutes was also noted. The patients were between 12 and 69 years of age, and 39 were men. Tuffier uses a special platinum needle, straight, 9 cm. long, the external diameter 11 mm. and the lumen 8 mm. It is strong so that it will not break if it comes in contact with the bone, and the tip is very short. The dose should not exceed .015 mg. of cocain. The technique is much the same as for lumbar puncture. The needle is inserted about 1 cm. from the median line of the spine, with the left forefinger on the apophysis as a guide. There is scarcely any resistance to the passage of the needle and the issue of a few drops of cerebrospinal fluid is the sign that the needle is in the right place. The patient should be warned that he is about to feel a prick and not to stir. Children and hysterics are liable to be afraid, and Tuffier rejects the method for them on this account. In case the anesthesia fails for any reason, the injection does not counterindicate resorting to general anesthesia at once. He changed to ether several times in his early experience, noting merely in such cases that the usual period of agitation was diminished.

Archiv f. Exp. Path. (Leipsic), March 22.

Alcohol and the Work of the Muscles. J. C. T. SCHEFFER.—The research reported from the Physiologic Laboratory at Utrecht confirms the results of others, that ingestion of a moderate quantity of alcohol—10 gm. in 90 gm. of water—first increases the amount of work accomplished by the muscles and then lowers it below normal. Experiments on frogs under the influence of curare—and thus the entire peripheral motor apparatus excluded—showed that the alcohol had no influence on the work of the muscles in these circumstances and consequently that it is not dynamogenic. It seems to be a true stimulant

for the peripheral motor nervous system, increasing its excitability for a while, but this period is always followed by a depression of reaction.

Alterations in Blood After Infusion of Salt Solution. R. MANGUS.—The dilution was the only constant change noted in the composition of the blood in numerous experiments on dogs injected with salt solution of varying concentration. This suggests that the dilution is the essential factor in the diuresis which it induces, but does not explain the fact that the diuresis ceases while the dilution is still at its height.

Archiv f. Path. Anat. (Berlin), April 28.

Psammoma. R. VIRCHOW.—When Virchow first described the psammoma, he was careful to discriminate between the sand-containing epithelial and connective-tissue tumors, and reserved the term "psammoma" for the latter variety exclusively. He protests against applying it to cancroids and endotheliomata, and emphasizes again that the sand formation is a concretion which requires an infiltration of calcareous salts as the preliminary. The sand bodies are not organic formations but merely physical concretions. The nature of the tumor containing them is not determined by the structure of the sand bodies, but by the nature of the pre-existing tissue. He also suggests that the existence of pachymeningitis arenosa supports the assumption of an irritative process in the etiology, which applies also to peritonitis arenosa.

Beitraege z. Klin. Chir. (Tubingen), January and March.

Carcinoma of the Penis. H. KUETTNER.—From observation of sixty cases at von Bruns' clinic, the writer concludes that the neoplasm must be considered malignant if the subject is young, if there are hemorrhages from the urethra or ulcerated tumor, if the carcinoma has a rapid local growth, if the corpora cavernosa is invaded, or if, with a still small primary tumor, the inguinal glands are suspiciously enlarged. Carcinoma of the penis affords more favorable conditions for successful ablation than does any other region; 59.46 per cent. of the 37 followed to date are permanently cured. In 73 per cent. the neoplasm had existed for one to four years and it was not deemed necessary to extirpate the glands. Of the 22 patients cured, 9 died three to three and one-half years after operation, of heart or lung troubles; 1 succumbed nine years later to a carcinoma of the stomach, and 1 had a cancer of the lip two years after operation, which was also successfully extirpated; 3 are still in good health twenty years after operation, and also 2 others, now over 80, who were operated on ten years ago. When recurrence occurred, it usually followed the operation within a few weeks. The glands in the vicinity must be extirpated in case of a malignant tumor.

Inflammation in Hernia Without Strangulation. G. DE FRANCISCO.—Czerny remarks that taxis may be more dangerous than an operation in some cases of an empty but inflamed hernial sac. He always operates promptly in such cases, and with invariably satisfactory results. There were adhesions, an abscess, an inflamed rupture of the intestine, of the omentum or appendix, in all except six out of his fifty-nine cases, reviewed in this communication.

Tincture of Soap for Disinfecting Hands. HANEL.—Further tests with spiritus saponis (P. G.) have confirmed its efficacy in the disinfection of the hands. It renders them as free from germs as it is possible to have them with our present methods, while it has no injurious effect on the skin.

Berliner Klinische Wochenschrift, April 30 and May 7.

Treatment of Infected Wounds with Hydrogen Dioxid. VON BRUNS.—To prevent the rapid deterioration of hydrogen dioxid, an acid is added, which is so high priced that it has rendered the dioxid unsuitable for general surgical use. Bruns announces that an absolutely pure, highly concentrated hydrogen dioxid is now made under his directions; it will keep several months, and as the most effective and harmless disinfectant for the treatment of infected wounds. It has a specific bactericidal effect on anaerobics, but merely attenuates the virulence of other micro-organisms. Its chief efficacy is due to its remarkable cleansing of the wound, and its stimulating effect on the tissues. The nascent oxygen forms a foam which mechanically loosens the germ-laden secretions, the coagulated blood and particles of dead tissue and brings them all up out of the wound with it. By this means the wound is cleansed throughout in the most gentle and at the same time most effective manner, while reaction is also promoted. Bruns applies it in a 1 per cent. solution, for irrigation, and on moist compresses. The Germans determine the percentage of solutions by weight, the French by volume; in the new hydrogen dioxid 30 per cent. by weight is equivalent to 100 per cent. by volume.

Resection of the Rectum. W. LEVY.—In order to retain the important muscles of the sphincter and levator ani, Levy, in removing a malignant growth in the rectum, reaches it through the sacrum, dividing the bone across at the lower edge of the fourth sacral foramina. The results have been extremely satisfactory in a patient thus operated on 1½ years ago to remove a carcinoma high in the rectum. The union of the stumps was faultless, not even narrowing the lumen. Continence is absolutely normal, not disturbed in any way.

Hydrotherapy as Prophylaxis and Cure of Tuberculosis. W. WINTERNITZ.—With the free use of scientific hydrotherapy, Winternitz has cured 80 per cent. of all chronic, afebrile cases of tuberculosis in his extensive experience. In "florid" phthisis he has arrested the affection or obtained comparative cure in 32 per cent., and even in the incurable cases, this treatment always gives relief and awakens hope. He urges in the prophylaxis of the disease to increase the resisting power of all threatened with it by having arrangements for cold sponging, pourings, and douches in all tenements and factories. Next in importance are "catarrh sanatoria," with facilities for alternating hot and cold, steam, CO_2 and light baths for the poor. He would also have "house sanatoria" in all hospitals, with arrangements for cold and CO_2 douches, with trained attendants for cold frictions and stimulating thorax packs. He also insists that all sanatoria for consumptives should have a simple contrivance in every sleeping room for these douches, which are most effective when taken directly from the warmth of the bed. He has devised a contrivance for this CO_2 bath, which is transportable and requires no water service. It is a water-proof box, like a steamer trunk, with extension sides, two cylinders stand beside it on the floor, one filled with water, the other with liquefied carbonic acid gas, which forces the water at a certain pressure, under control, through a jointed pipe for a general or local douche as desired, until the last drop of water is exhausted. The water thus saturated with CO_2 has an agreeable, mechanically stimulating effect on the skin. In his experience with 300 cases of tuberculosis, he has noted that, in 90 per cent. of married couples, the sound husband or wife fails to contract the disease although constantly exposed to contagion.

Centralblatt f. Chirurgie (Leipsic), May 12.

No More Danger in Trephining. S. VON STEIN.—With the improved instrument described, Stein is able to operate so rapidly that he has made five openings in the skull of the cadaver in twenty minutes, without the slightest injury to the dura, and his experience on man is very nearly as conclusive. A basket protector, as he calls it, fits over the cutter, a thumb-screw fastening it tight near the upper end. The lower end flares out into a ring which fits against the skull, when the hole has been drilled deep enough. The protector turns with the drill until the desired depth is reached, when the ring pressing against the skull prevents it from entering farther. This drill is then changed for another with a more abruptly sloping cutting point, but with a round button at the extreme tip. The protector is then adjusted to allow the cutter to enter a little deeper, and as the cutter turns, the button at the tip pushes the dura down out of the way of the cutting edge. All possibility of injury is thus obviated and the operator can proceed rapidly and with complete confidence.

Centralblatt f. Gynekologie (Leipsic), April 7 to May 5.

To Relieve Cancer of the Uterus. O. KUESTNER.—In case of an inoperable cancer of the uterus, Kuestner opens a passage into the rectum for the fetid discharges, and thus places them under the control of the sphincter ani. The neoplasm is cleaned with scissors and the hot iron ,and a wad of gauze is dipped in alcohol and placed over it, a thread left hanging from the wad. A transverse incision is then made in the rectal wall, establishing extensive communication between the rectum

and the vagina, and the thread is pulled out through the anus. The vestibulum is closed with sutures, and the fourth day the alcohol wad is removed by means of the thread. The procedure is simple and harmless, but rubber gloves should be worn by the operator, and the communication inspected occasionally to see that it is kept open.

Rapid Hysterectomy. D. STAPLER.—The clamps devised by Stapler fit over the broad ligament from the top to the bottom of the uterus, and are slightly curved to follow its outline. A thumb-screw in the handle holds the two long blades firmly together with an even pressure throughout. The ligament is then cut on the side toward the uterus and the organ thus shells out whole and unopened, without any loss of blood.

Relative Size of Sternum and Conjugata. J. KURZ.—The length of the sternum and conjugata vera, measured on 150 patients in Chrobak's clinic, showed a surprising relation between them, in both normal and rachitic skeletons. In 93 per cent. the difference was less than 1 cm., and in the rest it was 1 cm., or a few mm. more.

Retrostrictural Edema. G. KOLISCHER.—Our Chicago confrère calls attention to the strictures in the female urethra which may be congenital, or, at least, occur without preceding pregnancy or venereal disease, usually in virgins. Edema forms behind them, extending into the bladder and causing cystitis. Cystoscopy and internal urethrotomy will cure the trouble.

Artificial Premature Delivery. W. GRUSDEW.—In a plea for systematic, artificial, premature delivery, in the place of Cesarean section or symphyseotomy—which are always more or less serious matters for the future working capacity of the mother and still show considerable mortality—Grusdew relates his experience with a patient who has now five healthy children, and is, herself, well and strong, and yet her deformed pelvis rendered natural delivery impossible. It was induced artificially between the thirty-fourth and thirty-sixth week on nine separate occasions, always at her home and without complications. He comments on the coincidence that labor commenced spontaneously with the ninth time, at the date of the previous premature deliveries, indicating that the organ had become accustomed to delivery at this stage.

Centralblatt f. Inn. Med (Leipsic), May 5.

Limits of Normal Temperature. MARX.—The writer has been investigating the normal temperature of himself, his friends and 200 patients with afebrile affections, at the Berlin Institute for Infectious Diseases. He found the normal temperature 36 to 37 C. instead of the higher figures given in the text-books.

Therapie der Gegenwart (Berlin), March.

Local Application of Tetanus and Diphtheria Antitoxin. E. BEHRING.—Recent experiments on animals have demonstrated the importance of the direct contact of tetanus antitoxin with the infected and toxin-containing tissues, and Behring lays great stress on the advantages of direct application to the point of infection and vicinity. He recommends using the antitoxin in the uterus, or at least in the vagina, in case of puerperal tetanus, and in the peritoneum, with tetanus neonatorum. A dilution of 1/10 to 1/100 is sufficient for the purpose. He also advocates the local application of diphtheria antitoxin, spraying the nasopharynx with diluted antitoxin as an adjuvant to the injections.

Continuous Small Doses of Digitalis.—The necropsy of a middle-aged man showed cor bovinum, moderate stenosis of the ostium aorticum, aneurysmal enlargement of the aorta and arteriosclerosis of coronaries and kidneys. Notwithstanding these lesions, he had been kept in good health for a number of years by the daily ingestion of .1 to .16 gm. of digitalis powder. These small doses enabled his heart to perform its task satisfactorily, and yet he had taken only 305.29 gm. in eight years. He died suddenly in the midst of apparent good health, during some unusual physical exertion.

Solubility of Uric Acid. HIS.—According to the view advanced by His, uric acid is not an acid at all, and its solubility depends on the physical conditions of the medium. Introducing new molecules into the medium, sodium bicarbonate for instance, the solubility of the uric acid diminishes in direct proportion to the number of molecules added.

Psychotherapy of Pains. H. OPPENHEIM.—When the pains are of hysteric, hypochondriac, psychogenic origin and localized in one extremity, Oppenheim cures them with a course of systematic training by diverting the attention. The patient holds a watch to his ear and listens intently to the ticking, while the painful region is lightly touched, or the painful and a sound region are alternated, followed by pinchings, prickings, etc. A stage is soon reached when the patient finds that by diverting his attention he will cease to perceive the pains. This method of treatment requires patience, but its success in several cases of pseudoischias, etc., has fully determined its efficacy.

Therapeutische Monatschrift (Berlin), April.

Covering for the Feet. ZEUTCH.—All concede that our present methods of dressing the feet are unhygienic, and Zuetch proposes a remedy which will absorb the moisture of the foot and ventilate the shoe at the same time. This desirable result is accomplished by wearing an inner sole of two layers of blotting paper, and underneath them a layer of curled horsehair. The blotting paper absorbs the moisture from the foot and the upper layer will always be found dry; the pressure of the foot on the horsehair crushes it flat, but it resumes its former curl as soon as the foot is lifted, thus creating a vacuum which aspirates air to fill it.

Muenchener Medicinische Wochenschrift, May 15.

Immunization. VON DUNGERN.—If the *Seitenketten* theory of immunization is correct, the immune body and the complement will be found quantitatively independent of each other, which has proved to be the case. It has also been found that the same group of red corpuscles which enters into combination with the immune body in hemolysis serves too for the production of the immune body. When the groups of erythrocytes which produce the reaction of immunization are already saturated with immune bodies, injection of blood thus saturated produces no immune bodies in the animal. This shows that these erythrocytes can not be bound by the *Seitenketten* of the cells—absolutely similar to the immune bodies—and this again confirms the theory. It is further established by the fact that the cells with these complex *Seitenketten* are enabled to draw out complements from the blood serum by the presence of the complementophile groups. Dungern therefore concludes from these facts, which he claims to have established, that the globulicidal and bactericidal immunization reaction—like the closely allied antitoxic reaction—is due to a chemical process, the course of which can best be explained by the *Seitenketten* theory.

Inflammation and Adhesion of Serous Membranes. G. MUSCATELLO.—The writer modifies the statements of Heinz on this subject, reported in THE JOURNAL, of March 17, p. 683. He establishes that the loss of the peritoneal epithelium is not sufficient alone to induce adhesions, and also that when the chief condition for the formation of adhesions is present, i. e., the formation of a fibrinous exudate, the presence of the epithelium does not prevent the growing together of the two surfaces. The lifting up, throwing off and degeneration of the epithelium are in fact the consequences of the fibrinous exudation.

Training of the Partially Deaf and Dumb. BEZOLD.—By a new and ingenious arrangement of tuning-forks, Bezold has constructed an apparatus for testing the hearing capacity; it has revealed unsuspected partial hearing powers in a number of supposed totally deaf mutes. He urges that all such should be trained in separate institutions, not with those totally deaf, as they only learn to speak like the latter and forget the little they had learned from hearing spoken language before their entrance. Spoken language becomes like a foreign tongue to them under present conditions, and the little they succeed in hearing soon becomes absolutely unintelligible to them, when it might be the basis of almost normal speech.

THE TITLE of *Sanitätsrath* was recently conferred on a German confrère, Dr. Steffan, and 300 marks exacted for "stamp tax." He stoutly refuses to pay this tax, declaring that he had not solicited the title and prefers to keep his cash, and the authorities are in something of a quandary.

Societies.

COMING MEETINGS.

Medical Association of Delaware, Rehoboth, June 12.
Massachusetts Medical Society, Boston, June 12-13.
Oregon State Medical Society, Portland, June 26-27.
Colorado State Medical Society, Denver, June 13.
Maine Medical Association, Portland, June 13-15.
South Dakota State Medical Society, Aberdeen, June 14.
Indian Territory Medical Association, Wagoner, June 19-20.
Wisconsin State Medical Society, Milwaukee, June 20.
Third District Branch of the New York State Medical Association, Binghamton, N. Y., June 21.
Second District Branch of the New York State Medical Association, Schenectady, N. Y., June 28.

DELAWARE COUNTY MEDICAL SOCIETY.—The fiftieth anniversary of this Society was held at Chester, Pa., May 25. In honor of his fifty years practice of medicine, Dr. W. B. Ulrich was presented with a loving-cup.

SUSSEX COUNTY MEDICAL SOCIETY.—The officers elected at the annual meeting of this Society, held May 15, in Newton, N. J., were: president, Morgan D. Hughes; vice-president, Chas. M. Downing; secretary, Sidney B. Shaley; treasurer, E. Morrison.

BALTIMORE COUNTY MEDICAL ASSOCIATION.—At the annual meeting of this Association, which was held in Baltimore, May 17, the following officers were elected: president, H. Burton Stevenson; vice-president, W. E. P. Wyse; recording secretary, R. Percy Smith; corresponding secretary, R. G. Massenburg.

TOLEDO MEDICAL ASSOCIATION.—The last regular session of this Society until after the summer months was held in Toledo, Ohio, May 25. The principal feature of the meeting was the paper by Professor Nancrede, of Ann Arbor, on "Actual Experience with Modern Military Projectiles vs. Theory.

NORTH DAKOTA MEDICAL SOCIETY.—The thirteenth annual meeting of this Society was held in Grand Forks, May 25. The election of officers resulted as follows: president, H. J. Rowe, Casselton; first vice-president, H. D. Quarry, Grand Forks; second vice-president, W. H. Bobinstab, New Salem; secretary, Paul Sorkness, Fargo; treasurer, J. A. Rankin, Jamestown. The next meeting will be in Fargo.

CHICAGO ACADEMY OF MEDICINE.—The tenth anniversary of the Chicago Academy of Medicine was celebrated by a banquet at the Palmer House, May 25. About fifty physicians were present. Dr. W. A. Evans acted as toast-master and responses were made by Drs. Harold Moyer, W. L. Ballenger, W. Cuthbertson, H. T. Byford, E. S. Talbot, G. Fütterer, W. L. Baum, S. N. Hallberg and J. G. Kiernan.

CLINTON COUNTY MEDICAL SOCIETY.—At the twenty-fourth annual meeting of this Society, which was held in Clinton, Ill., May 18, the following officers were elected: president, W. P. Gordon, Carlyle; vice-president, T. Gaffner, Trenton; secretary, M. Broening, Carlyle; treasurer, P. H. Leibrock, New Memphis. Board of examiners: Drs. T. Gaffner, J. G. Vogt, A. W. Carter, J. W. Thompson and S. H. Wilcox.

MEDICAL ASSOCIATION OF MONTANA.—The twenty-first annual meeting of this Association was held in Butte, May 16-18. Nine new members were admitted, and the following officers elected: president, A. F. Longway, Great Falls; first vice-president, T. J. McKenzie, Anaconda; second vice-president, Louis Bernhein, Butte; secretary, B. C. Brooks, Helena; corresponding secretary and historian, J. F. Spelman, Anaconda; treasurer, George H. Barbour, Helena.

CONNECTICUT MEDICAL ASSOCIATION.—The 108th annual meeting of this Association was held in New Haven, May 23 and 24. Twenty-nine new members were added, making a total membership of 676. It was voted to recommend to the general assembly that a hospital be founded for tuberculous patients. The following officers were elected: president, Henry B. Almy, Norwich; vice-president, John H. Granniss, New Haven; secretary, E. N. Wordin, Bridgeport; assistant secretary, H. S. Miles, Bridgeport; treasurer, W. W. Knight, Hartford.

NORTH CAROLINA STATE MEDICAL ASSOCIATION.—The forty-seventh annual meeting of this Association was held in Tarboro, May 22-23. Durham was selected as the place of meeting in May, 1901. The following officers were elected for the ensuing year: president, J. M. Baker, Tarboro; first vice-president, M. H. Fletcher, Asheville; second vice-president, David Stanton, High Point; secretary, G. W. Pressley, Charlotte; treasurer, G. T. Sykes.

INDIANA STATE MEDICAL SOCIETY.—The fifty-first annual meeting of this Society was held in Anderson, May 24-25. The following officers were elected for the ensuing year: president, G. W. McCaskey, Ft. Wayne; secretary, F. C. Heath, Indianapolis; assistant secretary, J. B. Berterling, South Bend; treasurer, A. E. Bulson, Ft. Wayne. There were over 200 members in attendance. South Bend was chosen as the meeting-place for next year's session.

MISSOURI MEDICAL ASSOCIATION.—The forty-third annual meeting of this Association was held in Mexico, May 15-18. The following officers were chosen: president, U. S. Wright, Fayette; first vice-president, D. C. Gore, Marshall; second vice-president, J. R. Fritts, Mexico; third vice-president, R. S. Kelso, Joplin; fourth vice-president, Thomas Chowning, Hannibal; fifth vice-president, F. E. Murphy, Kansas City; recording secretary, B. C. Hyde, Kansas City; corresponding secretary, C. R. Dudley, St. Louis; treasurer, J. F. Welch, Salisbury. The next meeting will be in Jefferson City, May 21-23, 1901.

Kentucky State Medical Society.

Forty-fifth Annual Meeting, Georgetown, May 9-13, 1900.

President, Dr. William Bailey.

NEPHRITIS CONSIDERED AS A CONVENTIONALISM.

DR. U. V. WILLIAMS, Frankfort, read a paper on this subject, in which he stated that the kidneys are the scavengers of the body, and a correct diagnosis of pathologic conditions is often difficult; that but little can be done in organic disease, when the chronic form is very severe and grave; and that the various distinctions in literature are of little value. The beginning of disease of the kidney is often uric-acid diathesis, and all constitutional inflammation of mucous membranes is due to tuberculosis, diphtheria and specific diseases. The use of ice produces arterial pressure, and contracts the pulmonary vessels and the large ones of the chylopoietic system. Its general use invites nephritis. Cardiac and renal lesions are intimately connected. The great use of sugar is also a factor in production of nephritis.

RENAL INSUFFICIENCY.

DR. JOHN G. CECIL, Louisville, considered this subject. He said that a free blood-supply is essential to the proper performance of the function of the kidney; and that the blood must be of normal composition, the uriniferous tubules of normal size and unobstructed. The causes of renal insufficiency are functional, due to congestion from infectious disease and toxic poisons, and organic, due to structural change. The demands of modern progressive medicine are only satisfied by constant, persistent, and perpetual interrogation of the kidney function. In treatment of organic disease give rest, no diuretics, food and drink, clothing, exercise, hydrotherapy, mercury, strontium, and digitalis.

NEPHRITIS, ITS FREQUENCY AND IMPORTANCE OF EARLY DIAGNOSIS.

DR. J. A. HUMPHREY, Henderson, stated that the student of medicine is easily confused by various classifications, and that a simple nosology is a crying need. Nephritis is an inflammation of the kidney, interstitial and parenchymatous; pus may form. He had seen many cases this winter. An epidemic of cerebrospinal meningitis was accompanied by an epidemic of la grippe. The bacillus of Pfeiffer caused, as a complication to la grippe, diarrhea, pneumonia, heart inflammations; and might also nephritis. It is a primary and not a secondary invasion.

DR. LOUIS FRANK, Louisville, in speaking of causation of acute nephritis disagreed with Dr. Humphrey's theory, as to its being due to the bacillus of Pfeiffer. In the kidney we have a different structure from that of the lung, meninges and liver,

and micro-organisms acting on the former would end in formation of pus and destruction of tissue. Trouble in the kidney comes from elimination of toxic products: elimination is the key-note, not the disease itself.

DR. J. A. HUMPHREY stated that he was convinced his idea was well founded: That the structure of the kidney differed from other organs did not argue that the kidney should be the exception to the general rule of an organism being the cause of the inflammation. The frequency of la grippe coupled with the frequency of nephritis shows a connection between the conditions.

FEBRILE PUERPERIUM.

DR. HENRY E. TULEY, Louisville, read a paper entitled "What Is the Significance of a Febrile Puerperium?" He said that the maximum temperature compatible with the normal is 100 degrees, and that there is a normal chill and temperature, post-partum, from 101 to 104 degrees. This rise is complete at the end of the first twelve hours, and has reached the normal, below 100, at the end of twenty-four. On the occurrence of fever the diagnosis is assisted by a consideration of other symptoms, pulse, lochia, facial expression, state of the bladder, breasts and after-pain. The following diseased conditions were mentioned as responsible for rise in temperature: sepsis, auto-intoxication from the bowel, malaria, mastitis, typhoid fever, epidemic la grippe, tuberculosis, the exanthemata, eclampsia, erysipelas, pneumonia, rheumatism. There is no such condition as milk-fever, and so prone is a sepsis to occur that one should keep this constantly in mind, and arrive at a diagnosis by exclusion.

DR. ISAAC J. TOWNES, Beach Grove, reported seven cases of puerperal fever, three of them his own, two in the practice of other doctors, and two in nurses; three died. He believed it epidemic.

DR. R. C. MCCHORD, Lebanon, considered Dr. Tuley's paper timely. He said that sepsis is reprehensible in almost every instance; and that it is a disgrace to the medical profession that midwives are allowed to practice in this enlightened day. Frequent examinations during the progress of a case are unnecessary. He uses a post-partum douche as routine practice, and believes that all patients should be thoroughly examined afterward and all wounds repaired.

DR. W. B. GOSSETT, Louisville, said that the term "puerperal fever" should be dropped, and the word "infection" used; that there are three forms—sapremia, septicemia, pyemia; and that no pathogenic organisms are normal in the uterus. He said he would not use an ante-partum douche unless most especially indicated; and there is no need of the post-partum douche. He gives ergot in all cases.

DR. F. L. LAPSLEY, Paris, said that intestinal intoxication is frequent, and that temperature of 100 and 101 disappears after catharsis; that true puerperal infection is due to causes from without. Ergot is an old remedy but is best displaced by quinin and strychnia, that gives the same and better results. He urges all women to get up after the first few hours for emptying of the bladder.

DR. J. L. ATKINSON, Campbellsville, stated that the high rate of mortality in puerperal sepsis is caused by the inefficiency of treatment, and that most febrile conditions are due to sepsis.

DR. D. A. SIMMONS, Adairsville, in speaking of local treatment, said that there is too much interference with the body of the uterus, that the general treatment is very unsatisfactory, that douching is not good, that the use of the St. Cyr curette is better.

CANCER OF THE BREAST.

DR. JAS. H. LETCHER, Henderson, read a paper entitled "Early Diagnosis and Complete Removal of Cancer of Breast." He quoted Williams' statistics, and said that mortality from cancer is greatly increased, that it is 4½ times greater now than it was a century ago; and that it is probably of parasitic origin. In suspected cases, give the patient advantage of doubt by thorough excision of all the glands. There is hope in the first operation. About 40 per cent. of tumors of the breast are cancerous, and often not seen until there is systemic infection. Tuberculosis, mastitis, and cancer should be differentiated; if chronic mastitis extends beyond the climacteric, amputate dangerous portion, upper and inner.

LITHOLAPAXY.

DR. A. H. BARCLAY, Lexington, read a paper entitled, "Litholapaxy with Report of Cases." He prefers litholapaxy to lithotomy unless a combined operation is used—because convalescence is shorter, and there is small mortality, especially in the extremes of life. A child's urethra permits considerable dilatation; he reported five cases, the method used, when the patient is free from inflammatory condition of the bladder and urethra. He uses an alkaline solution or boric acid irrigation prior to and at the beginning of operation; when the kidney is free from trouble, eight ounces of fluid in the adult, four to six in a child, injected through an evacuating tube. Frequent introduction causes a swelling of the mucous membrane. Washing is continued until all fragments are removed; eight ounces of boric acid is left in the bladder, and patient kept in bed four days. Contraindications are tight stricture, organic disease of the bladder, sacculated bladder and encysted stone.

SOME COUNTRY SURGERY.

DR. ARTHUR T. MCCORMACK, Bowling Green, read a paper on this subject and reported cases, among them one of traumatic obliteration of the cavity of the uterus, due to craniotomy following labor lasting a week, seen four years subsequently.

INFLAMMATION OF MIDDLE EAR.

DR. A. O. PFINGST, Louisville, read a paper entitled "Inflammation of Middle Ear in Infants and Children." He referred to the muco-purulent fluid found in the middle-ear cavity of the the new-born, which is believed to be physiologic. In exanthematous fevers, the mucous membrane may be infected by circulation, but in a greater number it is through the tube; low vitality plays a part; it runs a benign course; pain is not frequent, the only evidence is the placing of the hand and restlessness; there is normal or slight rise of temperature. The spontaneous escape of pus is not common in children; the inspection of the drum tells little; if the tube is glued, the drum protrudes; the tendency is not great for inflammation to spread through the mastoid cells. Loss of appetite, emaciation, weakness, general marasmus, and digestive symptoms are so prominent that the ear is not thought of. The ears of children should be frequently examined. Ice or hot bags, or paracentesis, will keep it open when there is spontaneous rupture; chromic acid crystals are best for this; and there should be frequent removal of escaping pus by boric acid solution. If the mastoid process is infected, open at once. The prognosis of otitis in infants and children is uncertain.

"SURGICAL FANATICISM."

DR. AP MORGAN VANCE, Louisville, read a paper entitled "Too Much Enthusiasm in Surgery; Welfare of Patient Should Be First Law." The operations mentioned as unjustifiable were the Kraske operation, for cancer of the breast with great involvement; following the lymphatics along the arteries in cancer of the uterus; buried suture of silver wire; Edebohl's examination of the kidney through the lumbar incision; prophylactic removal of the normal appendix to prevent appendicitis; circumcision, as an operation should never be done in the newborn except where good reason exists; ligation of abdominal aorta—twelve cases were found in literature with twelve deaths; forcible correction of Pott's disease; operation on Gasserian ganglion.

DR. A. J. SLATON, Leitchfield, stated that prophylactic removal of the appendix is out of the question, but all male children eight days old should be circumcised.

DR. P. B. SCOTT, Louisville, referred to the removal of the mammary gland in malignant disease, and said that it is difficult to assure a patient that the mammary tumors will not return, though under modern technique, they will not appear in the affected part.

DR. J. G. SHERRILL, Louisville, said that every conscientious surgeon would concur in these statements by Dr. Vance, for the profession is injured by operations which give no permanent benefit; and that the recommendation to excise the appendix is not justifiable. It is too often heard from the laity: "the operation was a success, the patient died."

DR. H. E. TULEY, Louisville, mentioned as an instance of

unjustifiable surgery in obstetrics, the treatment which was recommended by a Canadian, to make a digital exploration in all women after the completion of the third stage of labor, for the finding of any possible retained placental tissue.

CLUBFOOT.

DR. BEN F. PARRISH, Midway, read a paper on this subject, in which he stated that all cases of congenital clubfoot can be cured; that the spastic variety is easy of diagnosis; and that the cause of the congenital form is speculative. When correcting it, the normal position should be assumed and kept long enough to improve nutrition. It is inadvisable to do this by a bandage; the pain can be prevented by paregoric. He mentioned Sayre's classification of contracted and contracture tendon, and said that the tendon should be severed in the latter form, but no opium should be given if there should be no pain. The dressing should be changed in two weeks, and any deformity remaining, corrected. The paralytic form is difficult to help, but the tendon grafting has good result.

(To be continued.)

Fourth District Branch New York State Medical Association.

Sixteenth Annual Meeting, Buffalo, May 8, 1900.

President William H. Thornton, M.D., Buffalo, in the chair.

CONTUSION OF THE EYE.

DR. ALVIN A. HUBBELL, Buffalo, read a paper in which he detailed the histories of two cases of contusion of the eye, in one of which anteversion of a portion of the iris took place, and in the other, retroflexion of the whole iris. The third case was one of the removal of a piece of iron from the interior of the eyeball. Of the cases of contusion, the first was a boy 14 years of age, who had been injured in the eye by a bullet, about one-fourth of an inch in diameter, discharged from a Flobert air-rifle. This was on Aug. 28, 1898, and on the following day the case was brought to him for examination. The boy stated that the ball had struck the eye and dropped on the ground, and he had picked it up. Examination showed no evidence of penetration of the eyeball. The pupil was distorted, and the iris was torn from the inner side and turned over so that the posterior surface was turned forward. At first glance, it appeared to be crowded to one side, and the vitreous humor protruding. After keeping the case under observation for some time the capsule of the lens was seen to be broken, and, in due time, the crystalline lens was entirely absorbed. The anteversion of the iris had remained permanent, but the eyesight had been preserved, just as it would have been after the removal of a cataract. Such an injury is exceedingly rare, the most peculiar feature being the anteversion of the segment of the iris.

RETROVERSION OF IRIS.

The second case was one of retroversion of the iris; its sphincter having become ruptured, the iris was turned backward. Where the whole extent of the iris is involved, there is usually also a rupture of the suspensory ligament of the lens, and when the entire iris is turned backward, the lens is dislocated into the vitreous humor, and the iris lies on the ciliary body. In this case there was a retroflexion of the entire iris, so that the whole width of the cornea appeared as a black space. The patient was a German, 55 years of age, who had come under observation on May 26, 1899. Fifteen days previously, he had fallen from a wagon, striking the left side of the face against the pavement. When first seen, the cornea was hazy, and the aqueous chamber was filled with blood. The tension of the eyeball was considerably diminished. The blood was gradually absorbed, and by June 10 had entirely disappeared. Probably there never was any hemorrhage into the ball except in its anterior portion. No vestige of the iris could be seen and in the anterior part of the eye was a quantity of dark colored debris, which floated about in masses or shreds that seemed to be attached to the ciliary body. These were gradually absorbed, and in a few weeks the patient was able to count fingers. On June 23, with a strong cataract glass, vision was 6/60 at a distance of twenty feet; the opacities had disappeared, and no portion of the crystalline lens could be found by him or by several other ophthalmogists. The fundus of the eye presented no pathologic appearance. In February of the present year his vision was half the normal.

REMOVAL OF FOREIGN BODY.

The next case reported was one of the removal of a foreign body from the eyeball, eighteen years after the injury. The patient was a sailor, 26 years of age, who had been for many years on vessels as an engineer. On Nov. 23, 1881, while making some repairs, a piece of iron penetrated his left eye. He went at once to Paris, and was examined by De Wecker, a world-renowned oculist. The opinion was expressed that there was no foreign body. Since that time the eye had remained more or less weak, and from time to time there had been attacks of inflammation. When first seen by Dr. Hubbell, in November, 1897, the left eye was normal in size and tension, and midway between the center and the outer margin was a brownish scar, and its surface appeared ulcerated. After dilatation with atropin, portions of the lens capsule could be seen apparently separated at one or two points. After a few days' observation, the inflammation subsided, but a similar attack occurred in March, 1899. According to his history, in 1892 there had been a severe inflammation in the uninjured eye, and at this time, and on a subsequent occasion of this kind, the inflammation of this eye had been preceded by tenderness of the uninjured one. Last fall a foreign body had been discovered in the old scar, and it had been found quite adherent. The electromagnet did not attract it at all, so, after incision of the parts, the foreign body was removed. It proved to be a piece of cast-iron, about 3 mm. long, oxidized, and almost spongy in texture. In ten days this eye was practically well. The piece of iron was too near the optical axis to injure the ciliary body. Two days after the operation the right eye became somewhat reddened and painful, and required treatment for several weeks. During the long retention of the foreign body the lens had become absorbed, and there had been at least two attacks of severe iritis of a sympathetic character in the other eye. This is apparently one of the very few cases of sympathetic ophthalmia in which recovery has taken place.

DR. ARTHUR G. BENNETT said that the case of retroversion of the iris is proved by the literature to be decidedly unique. The iris is not uncommonly torn from the periphery, but this turning of it is exceedingly rare. He had himself removed a piece of steel that had been retained in the cornea for six years, without any further inconvenience than sensitiveness to bright light. The man had come under observation without any knowledge of the existence of this foreign body in the cornea, and had sought relief for what was supposed to be merely eye-strain.

DR. A. A. HUBBELL said that he had never been able to dismiss the idea that the man with retroversion of the iris had struck his eye against some small body on the pavement, and that this body had rolled out of the way and had not been observed, so that it had been thought the injury was entirely the result of coming in contact with the pavement. However, there had been no external evidences of injury from such a body.

GOITER.

DR. E. J. MEYER, Buffalo, read a paper on this subject. He said that goiter occurs: 1, sporadically; 2, endemically; 3, epidemically; and 4, as a prominent feature of Basedow's disease. He said also that goiter was endemic in certain portions of New York State, in Detroit, Mich., and in lower portions of Canada at one time. In the region of Kingston, Ont., the disease is very prevalent, even certain strains of dogs and horses being goiterous. Munson found 1323 cases among the Indians of this country, and was impressed with the racial tendency to this disease. His conclusions were that the disease does not seem to be caused by high altitudes nor by water containing a large proportion of lime salts. Its development is favored by an excessively nitrogenous diet, and hereditary influence is strongly marked. The tumors among the Indians are smaller than among the whites. Often districts where goiter is frequent are separated by narrow limits from districts free from the disease. The water of certain streams have been known to almost invariably lead to the development of goiter in those drinking it. In Kocher's opinion, whenever a child develops cretinism, it will be found that the parents

have had goiter; and as he believes that the organic constituents of the drinking water are responsible for it, he recommends that the water be boiled.

The disease is quite prevalent in certain portions of Michigan: in Otsego county it is reported that one-fourth of the children born there, and reaching maturity, have goiter. Morris, of Hamilton, England, reports having seen fifty-five cases in a population of 15,000. Marsh attributes endemic goiter to infection, basing this opinion on its production in persons drinking the water of certain streams, and its disappearance after the introduction of better drainage. Epidemic goiter has been met with chiefly in certain parts of Europe; within a month after the arrival of troops in an infected region, 30 or 40 per cent. had developed it. The organisms found in this affection, by Klebs, seem to show that only under certain conditions do they cause the disease. It may develop in unexpected situations by what are called accessory glands. Virchow divides goiter into: 1, hypertrophy of the gland—a comparatively rare form; 2, fetal adenoma; 3, gelatinous or interacinous goiter, appearing usually in the later periods of life. It is in this form that cysts are commonly found. Virchow also recognizes follicular, fibrous and vascular forms. In the so-called aneurysmal goiter the arteries are chiefly involved; and in the more common varieties, the veins are generally enlarged. Special varieties result from changes and degenerations in these three forms, and the most common form of this malignant degeneration is round-celled sarcoma.

In this country the physician is most commonly consulted in cases of goiter because of the disfigurement, though pressure on the œsophagus, or on the vessels of the neck may demand relief, as may also the profound changes of nutrition described under the names myxedema and cretinism. It is not safe to remove the entire gland because of the danger of myxedema, for 12 per cent. of all cases in which total extirpation is done develop this or tetany, which, though not fatal, requires the constant administration of the thyroid extract. Kocher removes the thyroid regardless of the danger of tetany or myxedema, fearing the occurrence of malignancy. For the relief of dyspnea the removal of one-half of the thyroid will often prove sufficient.

A case of Graves' disease on which he operated in December, 1899, was next considered. The patient presented the ordinary symptoms of that disease, and the thyroid gland was about the size of a Florida orange. He removed half of it. But by the administration of twenty grains of thyroid extract daily for several days most of her former symptoms could be made to return.

DR. DE LANCEY ROCHESTER said that it is useless to speak of the various forms as having a common etiology, for many of the cases reported seem to indicate a distinctly infectious origin. The development of goiter in school children has little or nothing to do with the position of the head at that time of life, as some have suggested. He was glad that the removal of the entire goiter in Basedow's disease had not been recommended—indeed, each individual disease should be carefully studied before advising even the removal of a portion of the goiter; and if the tachycardia develop before the goiter, one could not look for much benefit from such an operation. The section of the sympathetic is a method likely to yield good results so far as the goiter and the tachycardia are concerned, but the profession still entertains misgivings as to the possibility of remote and unpleasant effects. He has had three sisters recover from goiter under the persistent use of tincture of aconite and iodid of iron, as recommended long ago by Flint. He began with three drops of the tincture of aconite, and gradually increased it, but did not go beyond a dose of eight drops, three times a day. One of these patients took the aconite for 1½ years, and the other for about six months before the desired results were secured. Both have now remained well for a period of about eight years. The iodid of iron seems to him the best form of iron to combat the marked anemia found in these patients.

(To be continued.)

Nebraska State Medical Society.

Thirtysecond Annual Meeting, Omaha, May 8-10.

President Dr. Robert McConaughy, York, in the chair.

HISTORY OF STATE SOCIETY.

DR. W. H. ORR, Lincoln, gave a report of the Society from the time of the first meeting in 1868. He mentioned the efforts made to secure medical legislation, that were not successful until 1881, and the Board of Health, that was not secured until 1891. He urged the members to join the AMERICAN MEDICAL ASSOCIATION.

NATURE OF ANTIPHLOGISTIC ACTION OF SALICYLATE OF SODIUM.

DR. HAROLD GIFFORD read a paper on this subject. He said that without regard to the absence or presence of rheumatism, it must now be acknowledged that this drug has a marked antiphlogistic action in all localized inflammatory conditions, involving moderate areas. One of the best illustrations is its action in sympathetic ophthalmia, an infectious disease arising from an unknown germ. Years ago he took the position that it so acted because it was a germicide. The conclusions were based on the fact that large doses are necessary and most successful in those most tolerant of it. To test the question, he made most careful examination of the urine of several cases, and found that 95 per cent. of the salicylates eliminated passed out through the urine. He used a definite dose of 150 gr. daily for a patient weighing 150 pounds. The amount found in the urine plus 5 per cent., subtracted from the 150 gr., gives the amount retained in the system. Three patients showed an average of 17 gr. retained. This must be diffused through the 130 pounds of the soft tissues of a 150-pound man, a proportion of 1:52,529. He asked: will the drug, in this proportion check pathogenic germs in the test-tube? A slight check in the body may allow the body cells to gain the upper hand and do the rest. Unfortunately, it requires 1:1000, or 1:500, to check pus germs in the tube in a decided manner. Anthrax grew very sparingly in a 1:1000 test. This evidence is opposed to the conclusion that 150 gr. in fifteen hours has much *direct* effect on germ growth in the body. Of how this is affected in the body, Oltramare's theory gives the most plausible way. He thinks that the salicylate produces a local depletion by the general capillary dilatation it causes. In a small inflamed area, the arterioles are dilated to the maximum by the bacterial toxins; the action of the salicylate causes a general dilatation of the arterioles over the whole body; this lessens the amount of blood passed through the inflamed area and checks the bacterial growth there.

SEPTIC PERITONITIS.

DR. CHAS. C. ALLISON read a paper on "Septic Peritonitis, Studied from Its Major Points of Origin." He said that the prognosis is grave, and the possibility of recovery is denied when the entire peritoneum is involved. The major points of origin are the appendix, the Fallopian tubes, the gall-bladder, and the stomach and duodenum. Protective barriers develop: intestinal coils adhere, and the omentum assists in forming a wall. The most successful means of treatment is rest without food, enemas, and gentle laxatives. Safety is assured when local disturbances are past; when collapse, if present, has been recovered from; when pain is less severe; when the pulse, respiration, lessened muscular rigidity, temperature, and general aspect are in accord. The bed-side picture is the only safe guide. Sudden amelioration of pain may mean either gangrenous appendix, general peritonitis, or the formation of an abscess, hence *all* symptoms must be taken into account. Ectopic pregnancy must never be forgotten. It may be present and rupture infraperitoneally, and can occur during lactation. Paroxysmal pain and faintness are usually present in ectopic rupture and will point to this condition. Acute, gastric or duodenal ulcer is rare; the symptoms are overwhelming and the collapse is very rapid. Gastric ulcer ruptures on the anterior wall of the stomach in 90 per cent. of cases and on the posterior wall in 2 per cent. The symptoms of perforation are: acute pain; rapid collapse; rigidity of abdomen; subnormal temperature; leucocytosis; rapid respiration; and absence of liver dulness. Surgical measures only are available. Exploration, cleansing of the affected area and no more unless the general cavity is invaded, are demanded. When the abdominal cavity has been invalided, and much exudate is present, counter-opening is needed, with thorough irrigation.

PAROTIDITIS.

DR. H. P. HAMILTON made a plea for the consideration of this as an infectious disease by no means limited to the parotid gland. He gave the history of a few cases and his treatment, surgical in character.

LEUCOCYTOSIS IN SURGICAL DIAGNOSIS.

DR. J. P. LORD read a paper on "Leucocytosis as a Factor in Surgical Diagnosis," in which he said that leucocytosis is now

being used to indicate the presence or absence of pus, or of any acute inflammation. "The number of leucocytes is not always in proportion to the amount of pus, but is, as a rule, to the virility of the infectious organisms." Thus, greater leucocytosis is present in a felon than in a pelvic abscess of large extent. The amount of the leucocytosis may also depend on the thoroughness of the walling off of the pus, or on the death of the germs. It is valuable in differentiating typhoid from appendicitis, also in confirming an opinion that one is dealing with a colic of any form, an intestinal obstruction, a pneumonia or a meningitis. After operations, it is valuable in showing the subsidence of extension of suppurative conditions. He gave the findings from four cases.

ECTOPIC GESTATION.

DR. W. O. HENRY considered this subject. He said that, having met with five cases during the last three months, he felt it highly necessary that greater care be taken in the diagnosis, as it is by no means so rare as has been thought. There are four varieties, the interstitial, the tubal, the ovarian, and the abdominal. The tubal is the most common, and while the ovarian variety has been denied, it does occur and is proved by the fact that a Graafian follicle is found at the base of it. The causes are still unknown, but the best theory is that it is due to obstruction. Medical attention is rarely called until rupture takes place; then the pain is ovarian; there are faintness, nausea and bearing down sensations; the cervix is soft; pulsation of uterine artery is plainly felt; a soft mass is felt in the vault; a very dark discharge comes from the uterus. If these conditions are neglected, temporary improvement may take place, but they will be repeated and death takes place often in rupture. He placed great stress on the very dark discharge. In the majority of cases vaginal puncture and drainage is the best plan; if this treatment is found inefficient he opens the abdomen. If there is great shock, normal salt solution must be used freely.

DR. A. F. JONAS said that he had seen an eminent laparotomist open the abdomen to remove a pus-tube and find an ectopic pregnancy. In his experience, the diagnosis was very difficult. If, as Lawson Tait asserted, the ovum develops in the Fallopian tube and ruptures in the twelfth week, if the ovum escapes between the folds of the broad ligament, we have the hemorrhage there, gradually dissecting the peritoneum away from the pelvic floor, and there is a tense, elastic tumor in the cul-de-sac, then vaginal section is the operation. If in the presence of the classic symptoms of ectopic pregnancy we have symptoms of rupture and no tumor in the cul-de-sac, then the ovum and hemorrhage are in the abdominal cavity and we must do an abdominal section. Kelly has made the abdominal section after he had done the vaginal, by reason of the fact that he was unable to control the hemorrhage.

TREATMENT OF PNEUMONIA.

DR. W. O. BRIDGES read a paper on this topic. He said that pneumonia is the most wide-spread of all the acute diseases. Specific treatment has long been sought, and the latest teaching is to rely on the expectant plan, meeting the indications as they arise. This yields as good results as heretofore and does less harm. The elder Flint took a long step forward when he took the position that it was an infectious fever. Two years ago he treated a case with the carbonate of guaiacol and secured good results. He was much interested in the recent article of A. H. Smith, which urged the use of guaiacol and the salicylates. Cassante and W. H. Thompson report very favorably on the use of the former. Liegel reports seventy-two cases treated with the salicylates, 120 gr. a day. His results were good. He said he himself had tried it in but eight cases the past winter, but his results were so good as to warrant calling attention to them. He used the drug constantly; in the early stages, 10 gr. every two hours, and strychnia in 1/20 gr. doses for short periods. He uses codein only for pain and delirium; and uses oxygen on the first sign of cyanosis. He is very careful to require the recumbent position, and an abundance of fresh air at a low temperature—55 to 65. He thinks that most so-called unresolved pneumonia is purulent pleurisy. He always uses the needle. He has seen many cases with bronchial breathing and yet there was a large cavity with much pus in it. He said that but few unresolved pneumonias end in tuberculosis. He sends them to the high altitude of Colorado Springs, and they get well.

DR. W. R. LAVENDER laid great stress on the fact that the toxins produced during pneumonia cause great degeneration of the heart muscle and death.

Illinois State Medical Society.

Fiftieth Annual Meeting, Springfield, May 15-17, 1900.

(Concluded from p. 1416.)

HYPERTROPHY OF PHARYNGEAL TONSIL.

DR. EDWARD T. DICKERMAN, Chicago, read a paper in which he discussed hypertrophy of the pharyngeal tonsil, adenoid vegetations, and enlargement of the third tonsil. A table accompanied it, from which the following facts were gleaned: 1. Cases are found at all ages, from the youngest—aged 6 weeks—to the oldest—43 years of age—but that the disease is found most frequently in childhood; 40 per cent. were found in children between the ages of 5 and 10 years, and 31 per cent. between the ages of 10 and 15. 2. Sex plays but a small rôle, although there is a slight excess to the credit of the female. 3. Mouth-breathers numbered 431, mouth-breathers at night only 74, while 21 breathed freely through the nose. 4. In 78 per cent. a lymphatic tendency was expressed by the enlargement of the faucial tonsils to a pathologic size. 5. A very important fact noticed was the large percentage—72 per cent.—of cases with, or with histories of, aural complications. 6. Hemorrhage was never alarming, and in but one case was there a secondary one. 7. Recurrence occurred in but two cases, where the operation was done under an anesthetic, and a secondary operation was necessary in 14 cases where no anesthetic was used, but the results were not always as satisfactory in cases not anesthetized. 8. Anesthetics were used in 304 cases in the following manner: Chloroform, 201 times; ether, 64; bromid of ethyl, 34; nitrous oxid, 5. He prefers chloroform properly given, although in some cases ether is probably better, notwithstanding the nausea that generally results.

RECTAL DISEASES.

DR. J. R. PENNINGTON, Chicago, discussed the diagnosis of rectal diseases, and, in order to clearly elucidate the matter, he called attention to a few points in connection with the anatomy and histology of the structure of the rectum and sigmoid flexure. Some of the statements made were a radical departure from those generally believed and accepted by the profession, but abundant evidence was advanced in favor of his position, relative to certain anatomic and pathologic points.

HEMORRHOIDS.

DR. N. H. HENDERSON, Chicago, spoke on the treatment of hemorrhoids, and discussed a modification of the Whitehead operation, that he has used in operating on 400 cases.

CONDITION OF SCHOOL CHILDREN.

DR. E. A. EDLEN, Moline, read a paper on "Mental Overwork and Lack of Interest in Physical Development and Hygienic Care of School Children, a Menace to the Future of the Race." He said that the present system of education in public schools tends to develop the mind at the sacrifice of the bodily health and physical development. The school-teacher takes pride in developing the intellectual faculties and ignores the physical well-being of the child. No discrimination in favor of the weak or backward child is practiced, and subjects beyond the grasp of the intellectual faculties are studied, and the reason for backwardness and inability is seldom considered. School hours are too long and lessons are not made interesting. Children are unable to fix their attention on any subject for more than a short time, still they must sit quiet during hours at a time in an over-crowded room, in an uncomfortable position, trying to learn an unintelligible lesson—all in direct violation of Nature's laws. The multiplicity of subjects bewilders the youthful mind and causes great strain on the nervous system, with a resulting breakdown. The physical development of school children is ignored by the average board of education, although it is equally as important as mental cult-

. It must be considered or the future of the nation will be angered.

ENTIFIC NEED OF LEGISLATION ENFORCING COUNTY REGISTRATION OF SYPHILITICS.

DR. JAS. E. COLEMAN, Canton, read a paper on this subject. said that there is an alarming increase of venereal disease ce the close of the Spanish-American War and that some- ng must be done to prevent the spread of syphilis, for the ragenital chancre is abroad in the land and the public health not safe. Nearly all contagious and infectious diseases are arantined by the public, and venereal diseases are not men- ned, while they are more dangerous in their remote conse- ences than all the contagious ones combined. These facts uld be recognized by legislators, and a law passed making mpulsory the registration of syphilitics. It is the duty of medical profession to insist on this.

STATE MEDICINE AND SANITATION.

DR. A. C. CORR, East St. Louis, presented a paper entitled Further Consideration of State Medicine and Sanitation." said that the conditions requiring state medicine are the erwise uncontrollable sanitation necessary to preserve and omote an average health among the citizens of the state. te medicine consists in state help to produce and preserve nditions of sanitation too great for the citizen of the lesser litical divisions, such as township, city or county, to main- n, and is a legitimate outgrowth of our social and civil com- t. It has limits with which all of us do not exactly agree, d an individual will differ with himself according to his od. Sanitation and state medicine should be brought con- uously before the people and legislative bodies; they should well argued and forcibly presented so as to bring about a ture conclusion at as early a date as practicable. The stion of public water-supply for potation and culinary pur- es should be more thoroughly considered than it has been in past. Limpid water, free of visible particles of sewage, uld be provided by companies—corporations asking for the nchise.

STATE CARE OF CONSUMPTIVES.

DR. JOHN A. ROBISON, Chicago, read a paper on this subject, said that the prevention of disease is one of the most im- tant paternal duties of the state. Members of the medical fession should bring to bear upon legislators and state ers such influence as will fill them with a desire to in- ute such measures as experience has proved to be efficacious the prevention and cure of this malady. These measures uld be directed to two subjects: the prevention of the dis- e and its cure or the alleviation of its victims and their ilies.

SANITARIUM TREATMENT OF PULMONARY TUBERCULOSIS.

DR. FLORENCE W. HUNT, Chicago, contributed a paper on this bject, which in her absence was read by Dr. Moyer. The his- y of the sanitarium movement was discussed at considerable gth, and attention called to the fact that it has been more tively and energetically advanced during the past ten years n has any other agency in the medical world. A brief mmary of the movement was presented. Great Britain was en credit as a pioneer in the founding of special institutions consumptives, the first chest hospital being established London, in 1814. The United States was one of the first ntries to build a sanitarium for the consumptive poor. To blish a sanitarium for consumptives in Illinois would be a djustment of existing institutional conditions on a more nomical basis, for by removing the consumptives the in- tutions would be rendered more efficient in the special aim which they are designed.

RELATION OF THE PHYSICIAN TO THE PUBLIC SCHOOL.

DR. KATHARINE MILLER, Lincoln, read a paper on this subject which she said that by virtue of the increasing recognition the public of the need of proper sanitation in school-build- s, the physician has a closer relation to the schools than has average citizen. This is emphasized as the public recog- e that the professional training of the doctor fits him for oversight of these things and makes him a skilled adviser. ide from this, the spirit of the profession compels the phys- ician's interest in these questions; and also in the subject of arrest and prevention of contagious diseases among children, the care of the body, including exercise and bathing, and examination as to defects in hearing and sight in their relation to mental development; all of which come within his province. Those who have studied these things must realize most clearly how much may be done for the rising generation by the supervision of the physican. To secure the opportunity for this, an enlightened public sentiment is needed and here the physician has a chance to use voice and pen to advantage in giving information.

Results are seen in the improved conditions of school-buildings, leading to better health of the children, the enforcement of vaccination, and the general enlightenment of the community as to the need and effects of school hygiene. As a matter of civic duty from those citizens specially fitted to render such service, physicians should interest themselves in school sanitation. They should be informed as to methods of heating, lighting and ventilating schoolrooms, occasions for quarantine, the effects of defective sight and hearing, needs of departments of cooking and manual training, school gymnasiums, amount of work to be required at various ages, and the adaptation of buildings, blackboards, etc., to the children's neeeds.

TREATMENT FOR TUBERCULOSIS.

DR. W. J. CHENOWETH, Decatur, read a paper on this subject with the axiom, "Remove the Cause and the Effect Will Cease." He said that assuming that the disease is the result of an attack by the tubercle bacillus on a susceptible lung, there is necessarily a combination of two factors, neither of which, if kept from the other, could have produced the disease. The result of the combination is evinced by an alteration of the organic and functional processes of the lung. The only conceivable method of relieving it is to render it unfit food for its enemy, which can be done only by bringing it up to a standard of health.

WHAT SHALL THE HARVEST BE?

DR. R. H. HENRY, Peotone, read a paper, with this as the subject, in which he said that all schools, private or public, should be under strict medical inspection—teachers and pupils alike. All tuberculous suspects should be tested with tuberculin, and school-buildings and premises should be thoroughly disinfected at the close of the school season and again at the beginning of each term, and floors should be scrubbed at least once a week with a disinfectant solution. There should be a medical health officer for each school, who with the board of directors, should constitute the school board of health. The teacher must know how to take pulse and temperature, and note the symptoms of the common ailments in children.

VALUE OF PEDICLED FLAPS IN INJURIES OF THE HAND.

DR. WM. SCHROEDER, Chicago, said that injuries of the hand which result in the destruction of skin and subcutaneous tissues, leaving the tendons and all or some of the bones and joints intact, may in many instances be repaired by judicious treatment. Amputations are frequently resorted to in contused, lacerated wounds of the hand, whereas burns are usually allowed to get well of their own accord, that is, plastic operations are not often performed. It is for such cases that he recommends the pedicled flap method; this he described in detail, giving as its advantages mobility, elacticity, and certainty of taking. Four interesting and instructive cases were reported in which the results obtained were excellent.

The following officers were elected for the ensuing year; president, George N. Kreider, Springfield; first vice-president, Weller Van Hook, Chicago; second vice-president, Denslow Lewis, Chicago; permanent secretary, E. W. Weis, Ottawa; assistant secretary, O. B. Will, Peoria; treasurer, E. J. Brown, Decatur. Officers of Section One: Chairman, Charles Dewey Center, Quincy; secretary, G. W. Nesbitt, Sycamore. Officers of Section Two: chairman, M. L. Harris, Chicago; secretary, W. F. Grinstead, Cairo. Officers of Section Three: chairman, Frank P. Norbury, Jacksonville; secretary, C. C. Carter, Rock Island. Peoria was selected as the place for holding the next annual meeting, May 21-23, 1901. The chairman of the committee on arrangements is J. D. Henry, Peoria.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION.
61 MARKET STREET, - CHICAGO.

SATURDAY, JUNE 2, 1900.

THE PRESIDENT'S ADDRESS.

The address of Professor Keen, published elsewhere in this issue, is an admirable example of what a presidential address should be, and ideally fulfils the requirements he himself has laid down for such an occasion. The condition and prospects of the ASSOCIATION, as he shows, were never better, but there should be no relaxation of endeavor to still further enlarge its extent and usefulness. The special points alluded to are such that their mention is timely, and we trust his suggestions will bear good fruit in the future. The recommendation that action be taken looking to an early completion of the Rush monument fund is one that should meet with general approval. There is the more reason for this, as he says, since as American physicians we should wish to not let an American patriot and statesman as well as physician go unhonored when a sect has obtained a site from Congress for an expensive statue of its idol, who has certainly no such claims on us as Americans. While we can not make a deity of any man in the regular profession, we ought, under the circumstances, not to neglect our illustrious fellow citizen and confrère.

The defeat of the Gallinger antivivisection bill, which was largely due to Dr. Keen's efforts, is a matter for general congratulation, and we will do ill if we do not, as an ASSOCIATION, follow his advice as regards future efforts of the kind. The public needs something from time to time to counteract the persistent slanders on the profession by the antivivisectionists, and owe much to Dr. Keen for what he has done in this direction. The laity generally will not believe that medical men are inhumane, but a small section are apparently obtuse to the higher humanity that regards human suffering, and they are persistent in their endeavors to spread their views. We all need to do what we can to inculcate correct ideas in this matter.

The chief subject discussed by Dr. Keen, however, is the endowment of medical education and scientific research, and there is hardly one that could have been chosen that is more timely and important. While, as he points out, every other branch of education has been liberally endowed, and scientific study in the less practical lines has been and is being largely aided from the public funds, medical education stands in this regard almost on the same ground as it did fifty years ago. Apart from a very few and usually partial endowments, medical education is still conducted mainly as a source of direct or indirect profit to the instructors, and scientific investigation is largely a matter of private enthusiasm and expense. Dr. Keen shows us what ought to be, and his utterances will, we trust, serve to aid in its achievement.

The ASSOCIATION is to be, we hope and believe, the chief instrumentality in this as in the earlier reforms in medical education. We have now a higher and more rational standard of medical education, and what we now need is to eliminate the "corporation for profit" element and make our schools what they ought to be. The endowment of professorships, of laboratories, and of research fellowships are direct means to this end. Dr. Keen has pointed out the ways and it rests with us to follow them.

CONCERNING THE REGENERATION OF NERVES.

Among those fundamental facts to which the neuron conception owes its adoption is the origin of the axis-cylinders as outgrowths from nerve-cells. Among the many investigators whose work has contributed to the proof of this are Ramon y Cajal, v. Kölliker, Retzius and v. Lenhossék. Considerable confusion, however, arose from the endeavor to adopt the processes of development to those of regeneration. This confusion was caused largely by the theories advanced by v. Bungner,[1] and his pupil, Wieting,[2] which assigned important rôles in regeneration to the cells of the sheath of Schwann.

The name "neuroblasts," applied by v. Bungner to the embryonic and proliferating cells that originate from Schwann's sheath after nerves are injured in diverse ways, carried with it the notion that the axis-cylinders were developed either from these cells directly or through their agency. Galeotti and Levi as well as P. Ziegler confirmed this belief, and Wieting not only corroborated it, but went a step further and declared that the myelin sheath likewise was regenerated from the cells of Schwann's sheath.

These opinions did not pass unchallenged. Stroebe and v. Notthaft soon correlated regeneration with development by insisting that new axis-cylinders are the product of an outgrowth from the old axis-cylinders at the proximal end of the severed nerve. The embryonic sheaths of Schwann became, according to Stroebe, "neurotized" by the sprouting axis-cylinders. During this time there naturally arose a diversity of views regarding the origin of the myelin sheath. The conceit advanced by Ranvier and Vignal, that myelin was formed from the cells of the nucleated sheath in a manner somewhat similar to the intracellular accumulation of fat, had obtained a foothold, for even v. Kölliker adopted it almost in its entirety in 1884 (Grundriss der Entwicklungsgeschichte). Stroebe, from his researches, concluded that myelin was formed about the young axis-cylinders as fast as they developed; Kölster and v. Notthaft, that the axis-cylinders are at first naked and only

[1] **Ueber die Degeneration und Regenerations Vorgänge an Nerven nach Verletzungen. Ziegler's Beiträge, x.**

[2] **Zur Frage der Regeneration der peripherischen Nerven. Ziegler's Beiträge, xxiii**

acquire a myelin sheath later; finally Wieting proclaimed the source of the myelin to be the new cells in Schwann's sheath.

Kölster,[3] in a later work, has undertaken to decide this question. He found in the embryos of Salmo trutta (salmon) and Sterna hirunda, the ordinary sea tern, that the myelin sheath is present around the axis-cylinders of the developing anterior roots of the spinal nerves, long before there is any grouping about the nerves of those mesodermal cells destined to form Schwann's sheath. In the embryos of many animals, a delay in the production of myelin is observed; it is not formed until after the nucleated sheaths have enclosed the axis-cylinders; consequently the study of such embryos furnishes no definite data.

If the dictum ascribed to Galeotti and Levi, that "the mechanism of regeneration is the same for each tissue as its mode of development," be accepted, the results accruing from the work of Kölster have an important bearing on the processes of repair of nerves. Kölster concludes, after commenting on the absence of nucleated sheaths about the medullated nerves in the adult spinal cord, that the myelinic sheath is as truly ectodermic in its origin as is the axis-cylinder.

Recently Gurnitsch,[4] while studying the development of primitive fibrillæ in young axis-cylinders, obtained a staining of the sheaths of Schwann at the commencement of their growths, at a period when they were not demonstrable by the ordinary staining methods. He found, by using Apathy's gold method, that soon after the sciatic nerve of the embryos of sheep becomes separated into secondary bundles, a network, which has its origin in the surrounding mesodermal cells, penetrates each bundle and divides it into compartments. Eventually this network surrounds each fiber and constitutes its nucleated sheath. Following this and at a later period, the endoneurium proper, which is to bind together the completely developed nerve fibers, is in its turn developed from the interfascicular connective tissue. The growth of Schwann's sheath was traced in both longitudinal and cross-sections of the embryonic sciatic nerves, and its exogenic mesodermal origin positively reaffirmed.

Whereas Kölster, by the use of Weigert's staining method, found the young axis-cylinders surrounded with myelin at a period when they were entirely unprovided with nucleated sheaths, Gurnitsch, in the sciatic nerves of sheep embryos, found the nucleated sheath formed first. Nevertheless, Gurnitsch came to the same conclusion that Kölster had before him, viz., that the nucleated sheath takes no part in the production of myelin, for he found that the myelin was deposited in minute droplets at places some distance from the cells of the nucleated sheath, and that its formation did not in any degree keep pace with the development of the sheath of Schwann.

The results of these investigations illustrate that the advancement of embryology paves the way to a more complete understanding of changes that for us have a more special interest; for it certainly can be expected that future work will show still further that the reparative changes occurring in nerve fibers after injuries closely follow normal histogenesis.

[3] Beiträge zur Kentniss der Histogenese der peripheren Nerven, etc. Ziegler's Beiträge, xxvi, 1899.

[4] Die Histogenese der Schwannschen Scheide. Archiv für Anatomie und Physiologie, Anat. Abth., 1900,

CONTRIBUTIONS TO THE SCIENCE OF MEDICINE BY THE PUPILS OF WILLIAM H. WELCH.

The pupils and friends of William H. Welch, professor of pathology, Johns Hopkins University, celebrated the twenty-fifth anniversary of his doctorate by presenting him with a copy of the volume bearing the titles at the head of this note. An event of this sort merits a little more than a passing word. In the first place, it is certainly gratifying to all interested in the progress of medicine in America that the custom of issuing a memorial volume—"Festschrift"—is coming into vogue. What better, more permanent, and more universally acceptable method is there by which to honor a great man or to commmemorate an important event than the publication of an appropriate book? A memorial of this sort is imperishable in more than one sense: libraries the world over will hand these books down to remotest posterity and the influence of the results of the original work, embodied in such a book as the one issued in the honor of Professor Welch, is permanent because of the additions thus made to science; because of the stimulus and the encouragement given the various authors and all workers in the same fields. A glance at the superb and handsome volume before us is sufficient to emphasize the truth of these statements.

There are 1066 pages; 37 separate articles by as many different contributors; and the majority of the articles are beautifully illustrated. The illustrations, we are happy to note, are American productions, and it is surely not too much to state that the illustrations compare favorably with the best of similar nature from other lands, both as regards the originals and the reproduction. The subjects treated deal generally with pathology, anatomy, and embryology. All the articles embody original work in these lines, of the highest order of excellence. The volume is one of which we may be proud, because it shows clearly that scientific medicine in America has safely reached such a stage of originality and productiveness in the development that it can not but have a marked influence on the medical science of the world. And this volume will undoubtedly long constitute a high-water mark in the scientific work of the Johns Hopkins school.

It is worthy of note that the articles, though largely representing the influence of one center, yet are so diversified and broad in their character and scope that they can not be said to embody the teachings of any special

"school" in the narrow sense that this word is sometimes used to indicate the championship of a special doctrine or theory. In fact, the freedom from the domination of any single theory has always been a strong characteristic of the work emanating from the pupils of Professor Welch, as would be expected when we consider the broad and unprejudiced nature of his teachings. The work of the authors not now connected with the Baltimore institution serves to indicate the fact that the spirit of original research thrives in numerous centers in the United States, and that the Johns Hopkins Hospital Medical School has had a hand in training many of our best investigators and teachers.

The simultaneous publication of three volumes of the same general character—the Pepper memorial volume, the one in honor of Welch, and that in commemoration of Jacobi's 70th birthday and previously noted in THE JOURNAL is sure to strengthen the good name of scientific medicine at and away from home. We may congratulate ourselves that we have so worthy objects for such great distinction, and that the wherewithal is forthcoming with which to carry out undertakings of this kind in such a magnificent manner. A high standard has been created; the occasions are most appropriate and worthy, and we hope that future efforts of this nature may be of equally high order.

THE ITALIAN SOCIETY FOR THE STUDY OF MALARIA.

The work of the Italian Society for the Study of Malaria has been noticed in these columns before;[1] the individual work of its distinguished members is familiar to all who are interested in malaria. The economic aspect of the malaria problem in Italy is of tremendous significance to that country, and in their efforts to solve it the zeal, ability, and the success of the Italian investigators, who have joined issues in this Society, have won the admiration of medical men all the world over.

The second annual report[2] of the president of the Society, Professor Celli, contains a succinct statement of the results of the year's work. Among the more important may be mentioned the demonstration that human malaria is undoubtedly carried and transmitted by a certain variety of mosquito, namely Anopheles, the distribution, habits, and biology of which have been thoroughly studied. Experiments have been made that show that human malaria is transmitted from man to man through this mosquito, and that malarial infections of certain animals are probably not transmissible to man.

The structure, the developmental cycles and the methods of reproduction of the malarial organisms in their human and their suctorial hosts have been quite clearly established. The epidemiology of malaria has been studied in the light of this new theory of its cause, the mosquito theory, and efforts made to determine the influence of atmospheric conditions, soil, water, and vegetation on the Anopheles and the spread of malaria. The mode of life of the laborer of the Roman Campagna has been studied in its relations to the disease. The epidemic year, with its recidivations, ends in June, but the new epidemic year begins in July from infections produced by the sting of the mosquito, which thus perpetuates the disease. Experiments have been carried out proving that quinin is without action on the sexual forms of the parasites, the forms that are most to be feared from the epidemiologic standpoint, and consequently it is hopeless to expect that this drug will exterminate the disease. Consequently, methods are now being sought that will destroy the mosquitoes or protect the skin from their bites; and at the same time others are engaged in studying immunity against malaria. It has been found that certain substances, such as methylene blue, produce immunity against experimental malaria. Mechanical protection of houses and of individuals against the entrance and the sting of mosquitoes has been accomplished to such an extent that during the coming malarial season more extensive prophylactic measures of this sort will be introduced on a large scale. Several popular works on malaria have been prepared under the auspices of the Society: the first volume of the scientific work accomplished by its members is being published; the more important results of this have already been published by the individual workers.

Enough has been said to show that this excellent Society is attacking the problem of malaria on a broad, scientific basis, and along all possible lines. In consideration of the small amount of money spent—about $2200 (13,000 lire)—it would seem that the Society has good reason to feel satisfied with the results achieved and to look into the future with confidence.

HYPNOTISM AND MEDICINE.

In again calling attention to hypnotism we merely emphasize much that has already been said on the passing of a subject that yellow journalism and the advertising quack have relegated to a doubtful position. Absolute impersonality as to our views on hypnotism does not admit the disparagement of honest work that has for its object the breaking up of absurd notions on any subject and the consequent removal of obstacles to its advancement; but we confess that intelligent and lucid dissemination of psychologic medicine is needed in this country, where more than elsewhere perhaps, such knowledge has long been riotous or apathetic, and is presented either by enthusiastic ignorance or by a too confident conservatism. Much of this disintegrated and unsatisfactory condition complained of is owing to the obsolescent methods of the metaphysicians, who, being ignorant of neural morphology and physiology, do nothing to advance psychology. It is rather to those familiar with the newer methods and investigations of technical progress, having regard to the physiology of the sentient organism or the study of nerve function in general.

[1] THE JOURNAL, xxxii, April 8, 1899, p. 769.
[2] Centralbl. f. Bakt., Abth. 1, 1900, xxvii, 395.

based on observation and experiment, that we must look for advancement. Those informed in contemporary neurology see that we have entered on a new field already showing fertility in result.

Among many questions that suggest themselves in this relation we may ask: What becomes of the dipsomaniacs alleged to have been cured by hypnotism? We find but unsatisfactory answers in perusing the more recent hypnotic literature, which, by the way, is numerous and varied, there being in various languages nearly twelve hundred volumes on the subject, not to mention numberless pamphlets and journal articles. The work of Nils Posse, of Moll, and the papers of Dr. Bramwell, in *Brain* (Part iv, 1896), give about all that is known of the subject.

As to hypnotism in itself a variety of opinion exists; but it is a mattter of surprise that it attracts so much attention, especially in this country, where the post-office department is embarrassed by the immense mail of the charlatans who advertise to teach it by correspondence, and where the question of hypnotism has ever entered into legal medicine. After long and careful investigation, by the schools at both Nancy and Paris, this matter was some years ago dropped by the best neurologists as unworthy of serious notice, and many articles on the "passing of hypnotism" appeared in the medical journals. Moreover, for curative purposes the use of hypnotism is very limited and rarely useful, some authorities declaring its application useless, and often injurious.

Hypnotism is discredited by our best neurologists. At a late meeting of the American Neurological Association, in Washington, D. C., there was a general agreement to this effect, when one of its oldest and most distinguished members, who has had more experience with suggestive therapeutics than any other man in the United States, declared that he had never seen a case cured by hypnotism, unaccompanied by other means, and that in his opinion hypnotism is of so little therapeutic value that it ought to be banished from medicine.

RHEUMATIC MYOCARDITIS.

It is a generally accepted fact, though at times perhaps it does not receive sufficient consideration, that the functional capability of the heart depends rather on the state of the myocardium than on the condition of the valvular apparatus. The effects of lesions of the valves, as manifested in obstruction or insufficiency, may be entirely neutralized or compensated for if the heart muscle be healthy, while on the other hand the most pronounced symptoms of circulatory failure may be present in the absence of any valvular defect if the myocardium be diseased.

The muscular wall of the heart may suffer in consequence of excessive physiologic demands on its powers, long continued or frequently repeated, or interference with its nutrient blood-supply, especially through the coronary arteries, or as a result of toxic or infectious processes. Rheumatism is known to be a common cause of endocarditis, but it is not commonly recognized as being responsible for changes in the myocardium. The latter may be brought about in part as a result of the high temperature, and in part by the action of toxic substances generated in the course of the disease, without further reference to that which results by extension of the inflammatory process when endocarditis or pericarditis has been set up. Some observations on the influence of rheumatism in the etiology of myocarditis are recorded by Fisher,[1] and some illustrative cases are related. A large heart, weighing 21 ounces, obtained from the body of a man, 18 years old, exhibited in addition to old thickening of the segments of the aortic valve, numerous grayish spots of irregular shape on the inner surface of the left ventricle; these, on section, were found to extend through to the pericardial surface. The heart from a child, 4½ months old, and dead from bronchopneumonia, exhibited aortic valvular disease and obstruction, together with increase in the interstitial connective tissue of the heart muscle. In the heart from a boy, 12 years old, areas of myocardial degeneration and hyperplasia of the interstitial connective tissue were found in conjunction with mitral obstruction. The heart from another boy, 8 years old, exhibited after death, thickening of the aortic segments and of the cusps of the mitral valve, with recent vegetations on the aortic segments, and on microscopic examination myocarditis with vascular injection and hyperplasia of the interstitial connective tissue. In some of these cases rheumatism had definitely been present, but in others its previous presence was assumed from the existence of valvular lesions. Symptoms of myocarditis were also observed in a boy, 9 years old, following an attack of chorea and also in a girl of 8 years, following an attack of rheumatism. Tachycardia was seen in a girl of 4, and in a boy of 8 years, following an attack of rheumatism, and mild attacks of angina occurred in a young woman, following an attack of rheumatism.

THE PLAGUE.

The U. S. Treasury Department has published and is distributing a pamphlet of information about the bubonic plague, by Dr. Walter Wyman, supervising surgeon general of the U. S. Marine-Hospital Service. It is intended as a practical guide to the public and to sanitary authorities, and gives a very fair general idea of the disorder, its mode of infection and the approved methods of guarding against it. The instructions are reasonably full, and the pamphlet will be a serviceable guide to local officials, to be supplemented with all other useful data that may be obtainable. There are many questions of the plague not yet worked out, and it is fortunate that some of these are in regard to facts of immunity and lessened virulence in our race and under the conditions in which we live. There is ample ground, however, for all reasonable precautions, as the

1. Bristol Medico-Chirurgical Jour., March, 1900, p. 16.

disease at its best is a formidable problem for sanitarians. Its obtaining a foothold in this country even locally would be a national misfortune.

THE GALASSI-GIFFORD PUPILARY REACTION.

Under the heading, "the Westphal-Piltz Pupilary Reflex," a contemporary[1] notices a phenomenon first described by Galassi and later independently discovered by Gifford, of Omaha. Galassi's observation was published only in society proceedings, so that it was easily overlooked, but Gifford's paper was published in a well-known special journal that ought to have been familiar to Westphal as well as to the distinguished ophthalmologist who edits our contemporary. In the latest issue of the *Archives of Ophthalmology,* where his original paper appeared, Gifford takes up the subject anew, doing full justice to Galassi's priority. He, however, himself noticed a little more than the Italian observer, and if we are to have a discoverer's name attached to the phenomenon it should be the Galassi, or the Galassi-Gifford, instead of the Westphal-Piltz reflex, for which term there is no warrant whatever except that it has the "made in Germany" stamp. We have noticed this matter before, but the occasion seems to call for its mention again.

VAUGHAN ON MILITARY TYPHOID FEVER.

The Oration on State Medicine, by Dr. Vaughan, in this week's JOURNAL, is one of interest as giving a summary of the forthcoming official report on the occurrence of typhoid fever among the troops in our late war. If the conflict was too brief or on too small a scale and too unequal to do much for the solution of many military problems it has given us some experiences that we can, if we are wise, use to our advantage should similar occasion rise in the future. The military typhoid in the camps is a part of the experience, and a very important one, causing, as it did, about 80 per cent. of the total mortality of the war. Dr. Vaughan shows that the chief sanitary sin was the pollution of camps and that for this as well as for their unsuitable selections the non-medical officers were largely if not solely responsible. Army surgeons can recommend, not direct, in such matters, and he makes the very suitable suggestion that in our national military school more attention be paid to instruction in army and general hygiene than has been given in the past. We would emphasize this and the necessary corollary that the officers of the state militias, who are likely to be more or less responsible in case of war, be similarly instructed. To allow the lessons, some of them very expensive ones, of the late war to go unheeded would be worse than foolish, it would be criminal, and the one here treated is one of the most important. The fact that typhoid fever is without exception a disease of armies is probably best explained, as is done by Vaughan, by the fact that we have it always with us and that collections of men under camp conditions especially favor its outbreak. The facts recently acquired as to the possible infectiousness of the urine for long periods after an attack explain very many of the puzzling questions of the disease. Dr. Vaughan's address, and still more the completed report of which it is a summary, will be classic among the studies of this infection.

1. Phil. Med. Jour., May 26.

FORMALDEHYDE AND MILK

At a late meeting of the Chicago Medical Society the subject of infant feeding was the order of the evening, and the discussion developed some interesting points. Dr. A. R. Reynolds, health commissioner of the city, took strong grounds against the use of formaldehyde in milk, a custom which he thought was becoming general and productive of evil. The subject of dangerous food adulteration is one of the most practical and important with which we have to deal and the more universally used the food the greater its importance. Milk adulteration, therefore, takes first rank as a sanitary question, and while harmless adulterations such as water are often flippantly alluded to, one can not but be serious when there is even a suspicion that the fraud is not merely a financial one, but one that threatens life and health. Of late it is said that under such names as "freezine," "preservaline," etc., there has been extensive use of such drugs as boric acid and formaldehyde in treating milk so as to render it longer marketable. It is claimed also that they are employed in such quantity as to be prejudicial to health, especially of infants, who are naturally the most general if not the largest consumers of milk, and one health inspector is quoted as expressing the belief that during the last year "fully 1000 children have been killed in Chicago by 'doctored' milk." If this is true even to the extent of one-tenth of 1 per cent. it is a matter that can not receive too early attention. Experiment made abroad seem to indicate that formaldehyde and boric acid, the substances usually employed, are prejudicial to health, if taken even in small quantities. The question, however, can not be regarded as absolutely settled, for some authorities claim that there is a safer proportion in which they can be used to advantage and that thus employed they are less dangerous than the practices of Pasteurizing or sterilizing by heat, so commonly employed. This does not do away, however, with the danger from their use by irresponsible dealers; whether Annett or Liebreich and Moechel are right, it is best to be on the safe side; and until further investigation has established the exact amount that it is safe to use, and established a standard test for the same, our health boards are only doing their duty in looking into the subject and excluding milks thus treated from public use if there is any evidence or reasonable suspicion of their harmfulness.

Association News.

THE ATLANTIC CITY MEETING.—The fifty-first annual meeting of the AMERICAN MEDICAL ASSOCIATION, in session at Atlantic City, N. J., June 5-8, has proved to be one of the most successful in the ASSOCIATION'S history. The Sections were all well patronized and did excellent work. Registration up to the evening of June 6 (time of going to press), was over two thousand. The Senn Medal was awarded to Dr. F. Gregory Connell, of Chicago, and the ASSOCIATION Medal to Dr. A. L. Bene-

dict, of Buffalo, N. Y. The newly-elected officers are: president, Charles A. L. Reed, Cincinnati; vice-presidents, A. W. Calhoun, of Georgia; A. A. Woodhull, of Denver; Philip Marvel, of Atlantic City, and Wm. E. Quine, of Chicago. The newly-elected trustees are: J. M. Mathews, Louisville, Ky.; E. F. Ingals, Chicago; W. L. Rodman, Philadelphia, and M. F. Porter, Fort Wayne, Ind. At the 1901 meeting the Oration in Surgery will be delivered by Dr. John A. Wyeth, of New York City; the Oration in Medicine by N. S. Davis, Jr., of Chicago; the Oration in State Medicine by Dr. George M. Kober, of Washington, D.C.

Medical News.

OFFICIAL information has been received at the War Department, Washington, D.C., that the Government of the Straits Settlements, by a notification published April 5 last, proclaimed Manila an infected port, on account of the presence of bubonic plague.

AT THE recent session of the State and Provincial Boards of Health of North America, at Atlantic City, N. J., the following officers were chosen: president, Dr. C. O. Probst, Ohio; vice-president, Dr. Henry Mitchell, New Jersey; secretary, Dr. C. L. Swartz, Rhode Island; treasurer, Dr. J. A. Egan, Illinois.

A BANQUET was tendered Professor von Bergmann, of Berlin, recently, by 300 of his friends in the profession. Liebreich made the principal address, paying special homage to von Bergmann as a leader in the fight which physicians have to wage constantly to obtain their rights.

THE UNITED STATES postal officials arrested the officers of the so-called "Metropolitan Medical College" of Chicago, on June 4, and they are to have a hearing on the charge of fraudulent use of the mails on the 14th. This institution is the successor of the "Independent Medical College" and the "National Health University," previously commented on in THE JOURNAL, and is charged with the same iniquitous performance as its predecessors.

THE STUDY OF MALARIA.—A permanent committee on malaria has been appointed by the Paris Academy of Medicine, consisting of Laveran, Kelsch, Blanchard, Railluet and Vallin, "for the study of paludism." A resolution was adopted urging that a scientific mission be sent to Algeria to study the question of transmission of malaria by mosquitoes, and prophylactic measures. England now has two schools and two "expeditions;" Germany, one school and the Koch expedition; Italy has a society for the study of malaria (see editorial columns this week); Belgium has recently founded a laboratory in the Congo, and special courses for instruction in tropical diseases have been opened in Holland and in this country. France has been hitherto content with Laveran's discovery of the malarial parasite as her contribution to science in this line.

FREEDOM OF PORTO RICO FROM SMALLPOX.—The prevalence of smallpox in Porto Rico shortly after the occupation of the island by United States troops was such that the neighboring islands declared a quarantine of fifteen days against Ponce. The disease existed in every direction and the military authorities determined to take the cases in hand and if possible remedy the evil. A general vaccination of the population was ordered and systematically carried into effect, vaccin being provided from a farm established at Coamo Springs. The work was declared finished June 30, 1899. No announcement of the results of the vaccination has as yet been made, but in a letter recently received at the office of the Surgeon-General of the Army, Major J. Van R. Hoff, chief surgeon of the military department and president of the superior board of health, states that no death from smallpox has been reported from any part of the island during the past seven months.

QUARANTINE AGAINST EGYPTIAN PORTS.—In a communication dated May 8, the consul of the United States at Malta reported that every passenger arriving there from any Mediterranean port east of Gibraltar must, before being allowed to land, declare on oath before an inspector of marine police or other superior officers, that he has not been in Egypt within twelve days. This measure is rendered necessary owing to the spread of smallpox in Egypt, particularly at Cairo, and to an outbreak of plague which has been officially reported. Up to the present time it has been learned that there have been three cases of plague at Port Said and two at Suakim. A few days ago two cases of black smallpox were discovered at St. Julians, a suburb of Valletta, which were directly traceable to persons just arrived from Egypt. A person who was connected with a family at St. Julians, resided in a lodging house at Valletta and was attacked with the disease after the St. Julians discovery. The local government at once took heroic measures and the latter patient and all of the occupants of the house were removed to the government lazaretto. One of the St. Julians cases terminated in death. The local health authorities are fully up to date in their methods and, owing to their promptness in dealing with the above cases, there is no danger of a spread of the disease. Inasmuch as one or more of our vessels from Manila will be returning to the United States by way of the Suez Canal in a few weeks, it might be well to warn them in regard to holding communication with Egyptian ports, as, judging from the strict quarantine laws put in force at various Mediterranean ports last summer, it might prove awkward should they desire to put in at ports between Port Said and Gibraltar. There is a strong probability, from present indications, that even Aden will be quarantined.

PENNSYLVANIA.

BY THE will of Henry M. Curry, who died in Pittsburg a short time ago, $20,000 has been given the Pittsburg Hospital for Children.

Philadelphia.

DR. THOMAS G. MORTON has taken a cottage at Cape May for the summer.

DR. HOWARD KAUCHER, of the Medico-Chirurgical College, and Dr. W. Pearson, of the Jefferson, have been appointed resident physicians of the Harrisburg Hospital.

THE ANNUAL commencement exercises of the Medico-Chirurgical College were held May 19, and fifty-nine graduates received diplomas.

A CASE of diphtheria has been reported in the Elwood Public School in the Twenty-second ward, and the building has been closed by the Board of Health in order that the proper preventive measures may be taken.

NOTICE HAS been given of the consolidation of the Mt. Sinai Hospital and the Franklin Free Dispensary at 236-238 Pine Street. This movement tends toward the establishment of a hospital for the downtown Jewish poor.

BEQUESTS TO UNIVERSITY OF PENNSYLVANIA.

The University has received a gift of $20,000 from Mr. John G. Carruth, toward the dormitory fund. This being a memorial

to his daughter, the building will be known as the Carruth Memorial. Mr. Dundas Lippincott has also given $20,000 as an endowment of a new house to perpetuate the memory of the father and son.

JEWISH HOSPITAL.

According to the annual report of the Jewish Hospital Association, the number of supporters is 1370; divided into four classes, viz.: 1000 members, 130 contributors, 190 patrons, and 50 friends. Last year there were 30,350 visits made to the Mathilde Adler Loeb Dispensary, and 25,665 prescriptions compounded. Within the past few days $7500 has been given this department by Mr. August Loeb. During the past year, 901 patients have been treated in the hospital, an increase of 75 over the previous year; and 11,433 patients in the out-patient department; 60,624 days' support has been given those in the hospital and incurable wards, at an expense of $41,166. The average cost per day was $1.10. The total receipts were $62,775.54, and the expense $62,513.62. The Lucien Moss Home for Incurables showed receipts of $261,393.75, and disbursements of $255,054.67.

MR. W. B. SAUNDERS announces that he has associated with him in business Mr. F. L. Hopkins and Mr. T. F. Dagney. The former has been manager heretofore of the subscription, and the latter of the publication, department. The firm will hereafter be known as W. B. Saunders & Co.

ILLINOIS.

THE WOMEN of the hospital board in Champaign made $700, May 26, by having the trolley lines in charge for that day, and providing various forms of amusement and entertainment in different parts of the city.

Chicago.

THE WESLEY Hospital passed into the hands of the Deaconess' Society of the Methodist Episcopal Church, June 11.

DR. A. H. FERGUSON has just recovered from illness due to infection received during an operation for the removal of gangrene.

AT THE commencement exercises of the Training School for Nurses of the Mary Thompson Hospital, the address was made by Dr. Sarah H. Stevenson, and the diplomas were presented by Dr. Lucy Waite.

THE PHYSICIANS' Club of Chicago held a business meeting and banquet recently and elected the following officers: chairman, Wm. H. Wilder; secretary, L. Harrison Mettler; treasurer, L. Blake Baldwin; directors to fill vacancies, John M. Dodson, M. W. Bacon and John L. Porter.

MARYLAND.

Baltimore.

DR. J. ROYSTON GREEN has resigned the position of resident physician of the Hospital for Consumptives and will enter on private practice.

THE JOHNS Hopkins Hospital Training School graduated twenty-four nurses on June 1. President MacAllister, of Drexel Institute (Philadelphia) made the address on "The Practical Education in Professional Life."

THE UNIVERSITY of Maryland has filled the vacancy in the chair of therapeutics, created by the resignation of Dr. I. Edmondson Atkinson, by assigning that department to Dr. Charles W. Mitchell, who will fill both this and the chair of pediatrics.

DR. L. BENDERLY has been appointed assistant resident physician at the Hebrew Hospital.

FOR SHIPPING DEAD BODY.

William Divino, late janitor at the College of Physicians and Surgeons, was tried in the Criminal Court, May 28 and 29, on the charge of unlawfully shipping a dead body from Baltimore to Sioux City, Iowa, last January, and was found guilty. The maximum penalty is five years in jail. A motion was made for a new trial. As mentioned in this correspondence at the time, a man died from injury in the City Hospital and his body was sent to the morgue. No one claiming it, after two weeks, it was assigned to the College of Physicians and Surgeons, where Divino, custodian of the dissecting room, received and receipted for it. Later it was discovered in a box in the Sioux City Express Office.

NEW JERSEY.

A PHYSICIAN living at Morrisville (Pa.) was arrested in Trenton, May 26, for practicing medicine without a license and held in $500 bail. It is claimed that the law is not violated when a physician who practices in another state is called to see a patient who may be ill in an adjoining state. Another claim is made that the party has a license which will be shown at the proper time.

Newark.

THE OPENING of St. James' Hospital occurred May 23. Dr. Augustus V. Wendel will be chief of the medical staff.

THE CITY Board of Health has taken initiatory steps toward the erection of a hospital for the care and treatment of communicable diseases. Dr. Herman Herold was made chairman of the committee, of which the other members are Drs. Frederick Becker and William S. Disbrow.

OHIO.

Cincinnati.

AT THE regular monthly meeting of the medical staff of the Cincinnati Hospital, Dr. G. A. Fackler was elected president of the staff for the ensuing year.

A CONFERENCE has been arranged between the secretaries of the State Boards of Health of Ohio and Kentucky, and the city health officers of Cincinnati and Covington, to be held in Cincinnati. It is the intention to establish a mutual relationship between the two states for the better control of contagious diseases.

MASSACHUSETTS.

THE BOARD of health in Boston has ordered that hereafter every physician must report every case of consumption that comes to his notice, as he would any other form of contagious disease.

AT THE annual meeting of the medical staff of the Franklin County Hospital, May 17, the following officers were elected: president, Dr. A. C. Walker, Greenfield; vice-president, Dr. Mary P. Dole, Greenfield; secretary, Dr. B. P. Croft.

THE NEW surgical building of the New England Hospital for Women and Children, at Roxbury, was dedicated May 21. Short addresses were made by Dr. Marie Zakozewska, the founder of the hospital; Dr. Elizabeth Keller and Rev. E. L. Clark, chairman of the building committee.

DISTRICT OF COLUMBIA.

RECENTLY appointed physicians to Georgetown University Hospital are E. P. Potbury, Jr., and John A. O'Donoghue.

THE SEVENTY-NINTH annual commencement exercises of Columbian University were held May 29. There were thirty-three graduates in medicine and thirteen in dentistry. The address was delivered by Dr. W. F. R. Phillips, of the faculty.

AT THE commencement exercises of the medical department of University of Georgetown, held May 22, twenty-one graduates received their degrees. The address to the graduates was made by Prof. Daniel R. Brower, of Chicago, and the degrees were conferred by Rev. John D. Whitney.

MICHIGAN.

THE FOURTH annual commencement of the Saginaw Valley Medical College was held in Saginaw, May 22.

AT THE commencement exercises of the Grand Rapids Medical College, held June 1, a class of twelve was graduated. Dr. Clarence White and Dr. Wm. Fuller made addresses, and Dr. E. G. Edwards presented the diplomas.

INDIANA.

PROPOSED CHANGE IN MEDICAL LAWS.

The State Board of Medical Examination and Registration held a meeting at Lafayette, May 29, and decided to recommend that the laws governing the practice of medicine be changed, so that a diploma shall not be recognized as a proof of eligibility to practice medicine, but only as evidence entitling the holder to examination. The Board will also ask the next legislature to enact a law giving a clearer definition of the phrase "practice of medicine."

CALIFORNIA.

ST. LUKE'S Hospital, San Francisco, is to have a new wing, to cost $50,000.

FIFTEEN were graduated from the California Medical College at the recent commencement exercises. One of the number was a Chinese student.

AUSTRALIA.

SYDNEY'S PLAGUE.

Various portions of the city are still (May 5) under more or less quarantine, although $150 a week is spent in placing it in better sanitary condition. March 27 the work of cleansing Sydney began, about 800 men being employed, and the number increased from time to time. In the quarantined area all able-bodied men are engaged to help the contractors, and prophylactic serum has been used on all employees. Seven hundred tons of debris were removed from yards and houses the first day. A price is placed upon rats in almost every portion of Australia. The epidemic seems to follow the line of sewage, and it is though that the rats are forced, by the use of disinfectants, up the sewers to the heart of the city. The first plague case was that of a man who for four months had been almost exclusively employed in carting wood from the city warehouse to a wharf. During this time four steamships from Hongkong, with Chinese crews, had lain at the wharf; one had been there from January 9 till January 20, and the first case was on January 19.

The record of cases reported stands as follows:

	Cases.	Contacts.	Deaths.
January	1	10	0
February	3	32	2
March	52	259	15
April	112	680	38
May 1	4	13	2
May 2	11	11	2
May 3	6	26	4
May 4	6	26	0
Total	195	1061	63

There are now 99 patients and 25 "contacts" in quarantine. Out of the large number of the latter, there have been only about 10 who took the infection. Yersin serum is not used, there being none in the city. Dr. Frank Tidswell, the government's bacteriologist, and Dr. Ashburton Thompson, the president of the Board of Health, have been visited by representatives from the various colonies, all of which are striving to stamp the plague out of Australia. The Citizens' Vigilant Committee has asked the medical profession to give lectures in various parts of the city instructing the people in all measures of prevention.

CANADA.

REGARDING BAKING-POWDERS.

The Department of Inland Revenue at Ottawa has just issued a bulletin dealing with the subject of baking-powders. In it are given the details of the analysis of 156 samples purchased throughout Canada. Out of this number only 44 were free from alum; or, in other words, over 70 per cent. of the baking-powders sold in this country contain alum. A large part of this bulletin is taken up with a study of the scientific evidence, having to do with the physiologic effects of the ingredient, and especially so with data which has accumulated since 1880, the date when the last bulletin on this subject was issued. While many manufacturers and some chemists claim that in a well-made alum powder, no alum as such remains in the bread, but hydrate and phosphate of alumina, this has been studied most carefully and the results of the investigations are thus given: "The question of the harmlessness of alumina, that is the hydrate, has, however, not been proved, and the most that can be said for it is that the case is still unsettled. The health of a nation is too serious a matter to be imperiled lightly, and if it be possible to secure prohibitory legislation against alum baking-powders, it is all the more desirable that manufacturers of these powders should be required to state their composition on the package, so that consumers may know what they buy and use. Until it is demonstrated that hydrate of alumina and (in the case of alum-phosphate powders) phosphate of alumina are harmless substances in food, the use of alum baking-powders is attended with a very serious risk; while not even the proving of these substances harmless would establish the safety of these powders, since for reasons already mentioned, it is quite uncertain that the reaction is completed in the bread."

CANADA AND THE BUBONIC PLAGUE.

The recent outbreak of the plague at Honolulu and its appearance at San Francisco and the Diamond Head Quarantine Station has directed the eyes of all Canada to Williams Head, anxiously inquiring what facilities there are on the Pacific Coast off British Columbia for the protection of the public health of Canada. The superintendent in charge of this station is Dr. Watt, a man who is alert and thoroughly alive to his duty and who has long ago expressed himself that no contagion will find him unprepared to meet it. The equipment of this station is complete and thoroughly modern. The hospitals and disinfecting houses and depots of detention are all furnished and ready for immediate use. The mechanical department is also up to date in every particular, and it is said to be a very interesting sight during the stay of an Oriental liner, to see hundreds of Chinese treated to their first bath in Canada—a bath from which disease germs never come forth. The system in vogue for the purification of the ships and their baggage is that by sulphur fumes; and the ropes holding the vessels to the wharf are carefully covered with funnel-like rat-catchers, to prevent the landing of any of these spreaders of the plague; 8000 gallons of muriatic acid and bichlorid of mercury is ready at any moment in an immense tank, to be sprayed on the exposed surfaces of ships where fumigations would not be feasible. The formaldehyde process is also in use. The hospital buildings are arranged on the pavilion plan, and very complete in all their arrangements, the better class of passengers, if necessary, being allotted separate accommodations. It will no doubt be eminently interesting as well as perfectly satisfastory to the citizens of the United States to know that Canada has such admirable facilities for coping and contending with any dreaded foreign pestilence such as the bubonic plague.

CANADIAN ARMY MEDICAL SERVICES.

It is very satisfactory to be able to report that the Government of Canada has been at last successful in placing this service on a proper footing. From the time of the Confederation, in 1867, the medical officer has practically remained in the position in which that era found him, a more or less ornamental appendage to the battalion claiming his services. In July last, the militia department issued a general order, and the scheme then outlined has now become established. The medical staff now consists of one colonel—director-general, 7 lieutenant-colonels, 17 majors, 22 captains, and 25 lieutenants. For the purposes of promotion, the officers of the army medical staff are considered as a distinct branch—under the command of the director-general—and promotion will take place from rank to rank on the same principle as that in a regiment or corps. Five bearer companies and five field hospitals were established on a peace footing. A bearer company will consist of 1 major, 2 captains or lieutenants, 1 sergeant-major, 1 quartermaster sergeant, 1 staff sergeant compounder, 4 sergeants, 1 bugler, 4 corporals, and 20 privates. The Halifax Bearer Company—No. 1 Bearer Company—is, however, to be kept on a war footing of sixty-four of all ranks. A field hospital will consist of 1 major, 2 captains or lieutenants, 1 sergeant-major, 2 staff sergeants, 2 compounders, 2 corporals, and 14 privates. Schools are to be held without delay in order to enable officers to qualify, and they will be in charge of officers who have already qualified at the depot of the Royal Army Medical Corps at Aldershot, England. These schools will last a week and terminate with an examination. Two classes of certificates will be given, viz., a first-class for officers making 70 per cent. of the whole number of marks and not less than 50 per cent. in any one subject; and a second-class to those making 50 per cent of the total, or not less than 33 per cent. on any one subject. In this way it is hoped that all the medical officers of the militia will soon become properly qualified in their duties and the whole service efficient and capable.

PROGRESS IN LEGISLATION FOR INEBRIATES.

As a result of a conference which leading members of the profession in Toronto have had with the Premier of the prov-

vince, the Hon. Dr. Ross, a bill has been drafted and will be introduced at the next meeting of the local house of parliament. It will provide that in all cities in Ontario, having a population of 20,000 or over, a probation officer will be appointed to take the supervision of drunkards who have been placed on probation by the courts on suspended sentence. A medical superintendent shall be appointed by the government to inaugurate and superintend the medical treatment of inebriates and dipsomaniacs and assist in establishing, for their treatment, cottage hospitals and special wards in general hospitals throughout the province. Then the government will by this legislation be authorized to make grants for this work for special hospitals and for special wards in hospitals already existing—a bonus of 25 per cent. of the cost of the building or special equipment, as the case may be; then an additional special grant of ten cents a day over and above the usual per capita grant to all hospital patients; then an extra grant of forty cents a day shall be allowed for a period of seven days, for cases of acute alcoholism. The medical treatment is not to be considered as a charity but as a loan, to be repaid subsequent to treatment and while still on probation. Able-bodied chronic drunkards, instead of being fined and sent to jail, shall be sent to the central prison in Toronto for not less than six months, and all female drunkards are to be sent to the Mercer Reformatory in Toronto on cumulative sentences. Chronic drunkards, male or female, not able-bodied, are to be provided for in county or city houses of refuge. The bill further provides for the appointment of three physicians of standing, by the government, to constitute a committee of consultation to co-operate with the superintendent in inaugurating and carrying out the purposes of the bill.

HAWAIIAN ISLANDS.

FIFTY-TWO lepers have been received at the Kalihi detention hospital during the last seven months. Forty of these were taken on May 22, for Molokai, by the steamer *Lehua*, which makes a semi-annual visit to the island.

HONOLULU'S PLAGUE.

The plague in Honolulu is a thing of the past. The quarantine was raised on April 30, no new cases having developed from March 31 to that date. The yellow flag had been flying over the city for nearly 4½ months, and during that time over two hundred post-mortem examinations were made of suspected cases. Of this number sixty were found to be genuine plague. These examinations were made by Dr. Hoffman, the city pathologist of the Board of Health; to him and Dr. Garvin, the first-call physician, great praise is due, not only for their unceasing labors during the epidemic, but for their wisdom in the measures taken to rid the city of contagion. Though communication with the outside world was restored April 30, the burned district—Chinatown and its environs—remained quarantined against the rest of the city until the middle of May, although bacteriologic investigation of the soil of this district had first been made, as previously noted in THE JOURNAL, and no bubonic plague germs had been found. As the plague is reported from several places in Japan, and has existed for some time in Sydney, extreme vigilance has been maintained at the water-front, a floating quarantine wharf being provided, at which all in-coming vessels are required to land. The lines are provided with rat-guards. In the process of fumigation all rats in the cargo are likely to be killed, but to prevent the escape of any to land the cargo is rehandled and fumigated in the warehouse on the floating wharf. A movement is on foot to make a public park of the burned district. The effect of quarantine on the sugar exports from Honolulu is shown by the fact that there were only 72,617,677 pounds exported during the first three months, while in the corresponding periods of 1899 the exports were nearly 118,000,000 pounds.

ACCORDING to the *St. Petersburg Med. Woch.*, the Russian railroads are to be equipped with special cars for the transportation of sick persons. They are to be made with three separate compartments, one for infectious, one for ordinary diseases and one for insane patients.

Correspondence.

Medicine in the Far East.

VIENNA, AUSTRIA, April 20, 1900.

BOMBAY.

To the Editor:—Next to Calcutta, Bombay is the seat of the largest medical school in India. There are about 400 medical students in attendance at the Grant Medical College there, and the English members of the faculty think the class is too large, and that some measures should be adopted to reduce its numbers.

THE JAMSETJEE JEEJEEBHOY HOSPITAL.

This is the largest institution of its kind I have seen in India. There is a separate set of buildings for gynecologic and lying-in cases, and a separate staff for these branches of work. Outside of this, however, Dr. Hatch, who has charge of the main hospital, does all manner of work, including that on the eye, nose and throat, as well as general medicine and surgery.

Among the first patients I saw with Dr. Hatch was a Parsee girl, suffering from tetanus, where the source of infection had been through holes punctured in her ears for ear-rings. Accurate statistics have been kept of the cases of tetanus treated in this hospital from 1849 to 1897. The average has been about 40 each year, or a total of 1900 patients, of whom 1090 have died and 810 have recovered. During all this period the treatment has changed from time to time as new remedies came into vogue, but the results have been nearly the same. These statistics have led Dr. Hatch to the conclusion that as far as curative agents are concerned, all the remedies so far used for the treatment of this disease are equally worthless. He uses chloral, the bromids and opium to control the spasms, but has no faith in any of these agents in lessening the mortality of the complaint. He has had considerable experience with the tetanus antitoxin and is outspoken in his condemnation of this agent. He says that in bad cases it does no good, and in the mild ones, he has seen it do harm.

I saw Dr. Hatch operate for an abscess of the liver, of which disease I saw a half dozen cases in his wards. He claims that the precaution taken by many surgeons to divide the operation into two stages in order to secure a union between the two surfaces of the peritoneum, is entirely unnecessary. He opens up the pus cavity freely, and then protects the peritoneal one by packing gauze around the incision. The aspiration of the liver, for whatever purpose it may be done, the Doctor looks upon as a dangerous procedure, and gave me several instances where death had occurred from hemorrhage following this.

I saw more cases of ununited fractures in a morning's stroll through the wards of Jamsetjee Jeejeebhoy Hospital than one would find in a western institution of the same size in a decade. Dr. Hatch attributes this unfortunate occurrence to the low vitality of his patients, in whom the reparative processes, after injuries, are below par. I am, with certain restrictions, a warm advocate of Championniere's ambulatory treatment of fractures, and believe that it is in just such cases as these illy nourished Indians that early passive motion and massage would assist the processes of repair and lead to better results. For some reason that I could hardly attribute to a constitutional dyscrasia on the part of the patient, whenever an operation was done for the relief of these cases an open suppurating wound followed.

Among the diseases for which the patients who enter this nospital are treated tuberculosis heads the list. Following this, in nearly the same proportion, are dysentery and malarial complaints.

There is a fine series of pavilions connected with this hospital for the care and treatment of gynecologic and lying-in cases. In Dr. Demmick, who has charge of these departments, I found an energetic and up-to-date man. They confine about 400 women annually. I saw, in a single day, more cases of puerperal infection than one would see in the great wards of the Allgemeines Krankenhaus in Vienna in six months. Dr. Demmick apologized to me for this unfortunate condition of

things, and attributed it in part to the carelessness of his assistants, but more especially to the mismanagement of the cases before they entered the hospital. Here in India, as in China, the practice of obstetrics is almost entirely in the hands of midwives. In China, this midwife, in the management of her cases, does not in any way attempt to interfere. In India, however, nearly every one of these women has some secret nostrum consisting of a salve, ointment, or powder that she introduces into the vagina just before or during labor, which they claim has the power to dilate the womb, as well as produce a traction downward that aids in the delivery of the child.

These applications are filthy compounds, and after their use, infection often follows, and it is from this class of cases that Dr. Demmick claims most of his child-bed fever originates. The Doctor has great faith in antistreptococcus serum in the treatment of puerperal infection, a faith that my experience with the remedy does not sustain, for while I have seen it do harm, I have never seen it do any good. Locally, he treats his cases by carbolized vaginal injections, meddling but little with the uterine cavity. He gives 5-grain doses of the carbonate of guaiacol. In the obstetric wards of this hospital I saw a case of tetanus following delivery, which, owing to the fact that the native women are mostly delivered on the ground, is not an unfrequent accident. The cases, however, are generally milder in form, and more recoveries occur than when the infection is introduced into the system through other avenues.

The female wards here were full of dysenteric cases, which Dr. Demmick treats by the administration of *hobarrhena antidysenterica*, an Indian vegetable drug, that, mixed with aromatics, is the active agent contained in the numerous nostrums that are sold in India for the cure of bowel troubles.

GOKALDAS HOSPITAL.

This hospital is named after a rich Parsee who built it and gave it to the British government on condition that the latter should run and support it. It is the best arranged, from a sanitary point of view, of anything of its kind that I have seen in all India. The floors are all tiled, the walls calcimined and the ventilation most perfect. The cots on which the patients lie are made of iron, covered with a straw mat and a single sheet. These Indians all prefer a hard bed and usually want no pillows under their heads. Dr. Henderson, who has charge of this hospital, belongs to the British sanitary service, and in the line of his duty there must play the rôle of physician, surgeon, oculist, aurist, and in fact, practice every department known to medicine.

I saw another case of tetanus there, which Dr. Henderson was treating with large doses of carbolic acid hypodermically, and keeping the patient profoundly under the influence of chloral. In carefully looking over the mortality statistics of tetanus in India, one will be struck by the fact that the disease is less fatal than it is in the West. This can be accounted for in part by the less impressibility of the nervous system of the Indian, as well as the milder form of the disease as it prevails here. I saw in this hospital several cases of ununited fractures, and an open, suppurating wound was a complication of every case in which an operation had been done for its relief.

Among the native Indians there are no medical colleges, and medicine is nowhere taught in a systematic manner. They have, however, a large amount of ancient medical literature, written by eighteen eminent authors, which has been unchanged for centuries, and which is looked upon as containing all that is worth knowing in the science of medicine. These works are all written in Sanscrit, and not one in a hundred who practice medicine in India can read this classic tongue. The healing art as practiced by ninety-nine out of every hundred who follow this calling, in this vast empire, is a pure, unmixed quackery. Each one of these practitioners claims to have in his possession remedies that are unknown to other members of the craft, which he hands down to his son, who, like himself, keeps them a family secret. Their materia medica is recruited largely from the vegetable kingdom, though they use copper and iron, and to those who can pay for the luxury they administer gold, pearls and corals. Hemorrhoids form a very common complaint among the natives, and the "pile" doctor, like his prototype in the West, roams from village to village in search of patients. His treatment consists in the application of strong escharotics that not only destroy the pile tumors, but often produce extensive sloughing in all the surrounding parts.

THE PLAGUE.

I spent several days, while in Bombay, among the plague-stricken victims of that city. Through the courtesy of Major Wilkins, who has charge of all the plague hospitals here, I had every opportunity to see and study this disease. I first visited the stations where the natives were receiving the preventive inoculation. In this line I was most interested in the work being done by Lieutenant Wylie and his wife, who are spending $500 a month of their own private funds in this work. To induce the natives to be inoculated, they give three day's rations of food and ten cents in money to every one who will submit to the ordeal. They inoculate about 100 every day. These patients report every morning. There is usually a marked constitutional reaction as a result of the treatment. The authorities have great difficulty in getting the natives to submit to this preventive treatment, and so far only 90,000 have been inoculated in the whole province in which Bombay is situated.

The toxin that is used as a prophylactic against the plague is prepared by taking the virus from the liver of a patient who has just died of the disease. Of this a culture is made in agar-agar, for from four to six weeks, or until the germs of the disease have attained their maximum of vitality. This first culture is now put into bouillon and allowed to undergo a second process of germination and growth. This second culture is next submitted to a high temperature so as to insure the death of all the germs that it contains. This last is the fluid used as a preventive injection. Dr. Wylie tells me that the great difficulty is to get antitoxin of a uniform and proper strength. I find a wide difference of opinion among the men with whom I have conversed as to the utility of this preventive inoculation. In fact, at the present time, the whole subject seems to be in an experimental stage. The best evidence of its efficacy is furnished in one of the prisons here, where among 100 uninoculated prisoners 40 died of the disease, while among 100 of those who had been inoculated, only eight died. To overcome the prejudices of the natives against the inoculation for the prevention of the plague, the Viceroy of India, Lord Curzon, before he started on his late tour through the country, had himself and all his staff inoculated.

When, in 1896, the plague first began to be a serious menace to Bombay, the British authorities attempted to carry out most stringent measures for its suppression. A house-to-house search was made, and every person who had plague symptoms was taken to a hospital for treatment. These regulations were carried out only a short time, when it was found that the opposition to them was so great that their continued enforcement would lead to a revolution. So at the present time, only persuasive measures are used to induce patients to go to the hospital for treatment. To accomplish this, it is generally necessary to allow the whole family to accompany the friend who is removed from his home, and temporary straw huts are erected in the hospital grounds for the accommodation of the entire family. Not only this, but all the friends must be allowed free access, at all times, to the bedside of the plague-stricken patient. A half dozen plague victims in the agonies of death, with all their friends hovering over their bodies, all within the confines of a single hospital ward, would produce a scene, if enacted in the western world, that would rend the heart of the most hardened onlooker. The air would be full of the suppressed sobs of the men, and the wild shrieks of the women and children. In Bombay, however, the whole thing is a silent and noiseless pantomine. Not a tear trickles down the dark cheek of the Hindu as he sits, a silent spectator of one of the most heart-rending scenes that it falls to the lot of man to witness. In both race and religion he is the opposite of the one who inhabits the other side of the globe. He is a fatalist and believes that whatever happens must occur and can not be averted, and therefore looks on it as a religious duty

to submit, without a murmur, to whatever fate the Creator may send to him.

In my observation in the plague hospitals at Bombay, I saw many cases that illustrate the great difficulties with which an early diagnosis of this disease is beset. In fact, patients are often received into general hospitals and treated for other diseases, especially for lung troubles, who really have bubonic plague. Several cases of this kind were received during the last year in the Jamsetjee Jeejeebhoy Hospital, through a mistaken diagnosis, and in this way two nurses and one young physician lost their lives.

Attached to every plague hospital is a detention ward where patients are kept during a stage of the disease in which a diagnosis can not be made with absolute certainty. In a hospital where there were 200 plague patients there were 50 who were inmates of the detention ward adjoining. I saw a good many patients examined by experts. The symptoms sought for as diagnostic signs of plague were an initial chill, glandular swellings about the neck, armpits, or groin, redness of the conjunctiva, partial aphasia, ataxic symptoms on attempting to walk, and shooting pains running down the back part of the legs. The temperature after the initial chill generally runs up to from 104 to 106 F., and after remaining at this point for 36 to 72 hours, falls again to normal or below.

The sickest patients die in this first stage of the disease. In those who survive, after the lapse of another twenty-four or forty-eight hours the temperature again rises. From this time on the fever runs the usual course of a severe case of septic infection. The seat of the glandular involvement seems to have much to do with sealing the fate of the patient. If the glands about the neck are invaded, the case is a hopeless one. Next in its fatal results is the infection of the axillary glands, and the most hopeful cases are those where the buboes form in the groins. If the patient survives with the last form of glandular suppuration, the destruction of tissue is sometimes terrible. I have seen open cavities extending above and below Poupart's ligament, as large as a cocoanut, where all the iliac blood-vessels and nerves were exposed.

I spent a forenoon at Arthur Road Plague Hospital, with Dr. N. H. Chosky, a native physician who has had charge of the plague work in this institution since 1896, and who has probably treated more cases of this disease than any man living. As illustrating the status of serumtherapy in this disease, and showing that at the present time the remedy is only on trial, the Doctor uses it on every alternate one as the patients come into his service, and treats the others on lines that he has heretofore adopted.

Ice applications are applied to the glandular swellings for the first forty-eight hours, and after that he resorts to warm poultices. Outside of the serum treatment, the management of the cases is purely symptomatic. Strychnin, camphor, digitalis and the like are resorted to to keep up the circulation. In all severe cases, the stomach will retain nothing, and medicines have to be given hypodermically and food by the rectum.

Though Dr. Chosky is not at all sanguine in his views in regard to the efficacy of the serum treatment of the plague, he is still hopeful and says that in his last 200 cases, one-half of whom he treated without the serum, and the other half with, of the former he saved 15 per cent., and of the latter 40 per cent. Major Wilkins tells me that for months together they have lost 95 per cent. of all the plague patients they have treated in Bombay.

I visited a small hospital set apart for the treatment of European cases of the plague. I found it nearly empty. It received twenty-five patients during the last four months, of whom one-half have died. The Parsees have a separate hospital for the care of their plague patients, and the mortality among them is slightly less than among the Hindoos, though the nervous sequelæ that follow the disease are much more frequent among them, owing to their being of a more neurotic temperament than are the Hindoos.

The curative serum used is prepared in a large laboratory in Bombay, of which Dr. Bannerman has charge, and to whom I had a letter of introduction, but I was so pressed for time that I was not able to visit this institution.

W. S. CALDWELL, M.D.

The "Assistance Publique" of Paris.

PARIS, FRANCE, April 25, 1900.

To the Editor:—In the novel, "Les Morticoles," Daudet caricatured the Assistance Publique as an organization which, owing to the degenerated state of French society, finally became so powerful that there were only two classes, one composed of the Assistance Publique, with its vast machinery of lawyers, doctors, internes, externes, druggists, nurses, and attendants who were engaged in taking care of the other class, which was composed of the rest of society, comprising the ill and the imaginary ill, the insane, idiots, senile, juvenile, vicious and poor. While it is amusing from its absurd exaggeration of the modern tendency to mental and physical degeneracy, it is no exaggeration of the rapidly growing idea among the people—fostered by the prodigal amount of gratuitous work on the part of the medical profession—who think that society owes them a living and medical treatment. There was recently a case of two sisters, one of whom received aid from the Assistance Publique on account of poverty and tuberculosis, and the other gave up her work and tried to draw a pension also; when refused she hired a lawyer and brought suit for her rights.

Because the municipal council has recently granted an appropriation of about seventy-five million francs for remodeling such old landmarks, infected but historic, as Pitié, Charité, Bichât, and Laennec, the Assistance Publique is assumed to be immensely rich. But this is not at all true. The annual sum expended amounts to about thirty-five million francs, while the total revenue from rents, tax on balls, operas, spectacles, Paris-mutual (horse races), as well as private donations, does not amount to more than fifteen million francs, which leaves an annual deficit of twenty million francs to be made up from the municipal budget. The Assistance Publique was founded in 1849 and comprises in its management nearly all the hospitals and asylums, as well as the distribution of succor to the indigent, both within and without its institutions. Its work extends to more than half a million people annually; about 200,000 in hospitals and retreats, 11,000 orphans, 3000 insane, 113,000 indigent and necessitous, 110,000 aided at domicile, 22,000 accouchements, 30,000 children cared for in provinces, 4000 morally abandoned children, and about 10,000 children whose parents are assisted in supporting them.

The director-general, Dr. Napias, who receives a salary of 15,000 francs, is assisted by a council of surveillance composed of thirty-five members—one-fifth of whom are medical men—who are appointed by the President of the Republic for a term of six years without salary. The headquarters of the administration is at 3 Avenue Victoria, near the Hotel de Ville, where any one interested in visiting any or all of the institutions can obtain a card of admission from Dr. Napias.

Naturally, with such an extensive service, there is an immense staff to preside over the different bureaus; for in the present state of French "Mandarism," to become consulting physician one has to pass through the successive *concours* of *staziare* externe, interne, assistant, *agrégé medicin des hôpitaux*, etc. The fierce struggle to pass the *concours d'Internat*. was shown recently in the scandal of l'Hôpital Beaujon—where some unknown rejected candidate poured sulphuric acid into the box of examination papers, thus nullifying the examination, as previously noted in THE JOURNAL. The failure to discover the culprit may be explained by the intense *esprit de corps* existing among the students, that makes them all suffer rather than betray one of their number. This *esprit de corps* binds together both students and professors in such a solidarity of the profession that the absurd and meddlesome interference of laical directors in hospital affairs, as exists in many American hospitals, would be an utter impossibility in France.

Since so much is consumed by this institution, a great saving is secured by having under its own management a slaughter-house, and part of the central market, wine cellars and bakery. The latter, in the old "Scipio palace" in the Rue Scipio, buys wheat in large quantities and puts it through all the milling processes, turning it almost directly into the steam dough-mixers of the bakery, whose ovens, running day and night, turn out 16,000 kilos of bread a day, not including over a thousand loaves of glutin bread for the diabetics. A central

pharmacy puts up all the stock drugs as well as supplies the French hospitals in Africa and the Orient. A central magazine, near the Salpetrière, makes bedding, surgical dressings and clothing for the patients, utilizing for this purpose the services of many of the inmates of the Salpetrière. A central amphitheater of anatomy furnishes material for the students who can not be supplied at the University.

ECOLE LAILLER.

To go into a minute description of all the branches of this great "hospital syndicate" would take too much space. I wish to call attention to one department, on account of its novelty —the Ecole Lailler—for the treatment of contagious scalp diseases of children at l'Hôpital St. Louis. Prior to 1890 the children suffering with scalp diseases were put into the general wards with adults, until Quinquad set apart a portion of the Salle Bazin for the treatment of the *teigneux*—ringworm cases. This was an old building where there was an ecole externe for many cases for whom there was no room, but who came daily for treatment and instruction. When Besnier took charge of the service he had a young interne, R. Sabouraud, who took up the bacteriologic investigation of the *teigne tendante* or ringworm of the scalp, and demonstrated that it was due to two distinct forms of parasitic plant life the *microsporon Audouini* or *petit spore* and the *tricophyton* or *gross spore*. The former produced a large circular or oval bald plaque, in which projecting stubs of hairs were coated with a sheath of minute spores resembling fine sand sprinkled on a glue-coated thread; and the latter produced numerous small plaques in which the hairs, broken at the surface of the skin, showed as small black points or else were twisted under adherent scales that revealed under the microscope chains of large cells within the hair shaft. One was an ectothrix, the other an endothrix. In his investigations, which formed the basis of his "These de Paris" (1894), he generously gave all honor of his prediscovery to his eminent predecessor in the same field, Gruby, whose work fifty years previously (1840) had failed to be recognized by the medical profession. The honor is none the less due to Sabouraud, whose work was entirely original and remains classic. In 1892, there broke out in the hospital at Bery-sur-mer—a sanitarium for children with true tuberculosis—an epidemic of *teigne tendante*, and Besnier was appealed to for aid in suppressing it.

He sent his interne, Sabouraud, who examined and found out of 500, 350 heads affected, the boys mostly having the *petit spore*, and the girls, *gros spore*. After nearly a year's work, with a corps of epilators and careful isolation, the disease was at last entirely exterminated.

Imbued with an enthusiasm, all the greater for the general indifference or ignorance on the part of the public and the profession in the care of these cases, Sabouraud set to work to found a special hospital and laboratory for the study and treatment of parasitic scalp diseases. The Assistance Publique, aided by private subscription, founded in 1895 the Ecole Lailler in the northwestern end of the grounds of St. Louis Hospital.

While the *teiznes* are very rare in Germany, they are very frequent in France and England, there being about three thousand cases in Paris alone. When treated they may be cured in several months; untreated they last an average of four years. Favus, which is much rarer in cities and more common in the country, may last ten to twenty years when untreated. In other words about 5 per cent. of the infant school population is affected and refused admission to the city schools, 1 per cent. may find a place in special services, and 1 per cent. may receive externe treatment, leaving 3 per cent. to become street vagabonds, with its deplorable consequences.

The Ecole Lailler is a three-story brick and stone structure, occupying three sides of a hollow square, which forms an ample playground for the 350 children who are so fortunate as to be admitted. Large dining-rooms, well aired, hygienically perfect sleeping-rooms and school-rooms, abundant nourishing food, make their lives blissful as compared with their former homes. The whole drawback is the weekly séance with the *epilator*, of whom there are sixteen, and the bi-weekly application of croton-oil, with the subsequent expressing of suppurating follicles with antiseptic applications of iodin and iodid of potash solution. As all cases suspected of having contagious scalp diseases are sent to Sabouraud for a certificate before being admitted to the schools, his Monday consultations for the *teignes* and Thursday for the *pelades* are crowded, and there is a long waiting-list for admission to the school.

When the case is considered as probably cured, the child is discharged with the injunction to return in a month for observation, then if there are no signs of return, a "provisory certificate" is given, and at the end of another month, a second certificate or "certificate definitive."

A branch of the Ecole Lailler, called "Ecole B," in another part of the grounds, is devoted exclusively to favus and *pelade*, or alopecia areata, so that the children affected with these mildly contagious scalp affections can not contract the extremely contagious *teigner*.

There are here about sixty cases of *pelade* which are treated by means of the electric-light rays, as furnished in the apparatus of Finsen, of Copenhagen. An arc-light of twenty thousand candle power sends its actinic and violet rays through a system of lenses in four telescope tubes upon the heads of the four individuals who can take treatment simultaneously. A stratum of circulatory water in the telescope tube absorbs the heat rays, while at the point of focus, another water chamber lessens the unpleasant sensation of heat. The treatment is given three times a week, in one-half to three-quarter of an hour séances and the results obtained often after two or three weeks of treatment have been very gratifying. The favus cases, about fifteen in number, are treated by monthly epilation, with iodin, iodid, and glycerin applications, and average four to five months of treatment.

The clinical advantages of the school are made available to the profession in the bi-weekly consultations in a course of lectures on scalp diseases, by Dr. Sabouraud, gratuitous, in which the cultures and life history of the scalp micro-organisms are given, as well as a demonstration of the cases. The privilege of working in his perfectly equipped laboratory for histologic and bacteriologic work is extended most cordially to a certain number of native and foreign physicians.

A. D. MEWBORN, M. D.

Opium in Infancy and Adult Life.

WESTFIELD, N. J., May 22, 1900.

To the Editor:—I have read, with the greatest interest, the paper in THE JOURNAL of May 19, entitled: "Use of Opium in Infancy, seen in Adult Life," by Dr. T. D. Crothers. It is, in many respects, one of the most striking contributions to current literature that has been recently published, and although a year has passed since the occasion of the Doctor's reading it, it touches the chord of perennial importance.

I have not had all the experience that Dr. Crothers has had, for I am not a specialist in his line, but in the course of practice among children in both New York and Brooklyn, from 1888 to the present year, I have been privileged to corroborate and confirm all that he has said, and very much more. The use of opium in infancy and childhood is an evil of the greatest magnitude, and especially among the working classes. I have no statistics to publish, but I can say that the custom prevails to an alarming extent. Not only is there the recognition of the convenience and practical value of the remedies for children's disorders, but quite as often where a child is in perfect health, the use of the opiate to "keep it quiet" is a stand-by. If the prescription-files and sales-books of the druggists were to be scanned, it would be evident that the evil is spelled with a large "E," and it is a formidable one, because when one tries to "reason" with those who dose the children, it is invariably useless. They may apparently have all confidence in you, and hear your reproofs with good grace, but no sooner do you leave the house than that mother or sister finds the bottle on her cupboard shelf, or on the shelf at the drug store, and gives a dose to the child. She may not intend to be a hypocrite, or to array herself in opposition to you; possibly not, but she knows, and you know, that the seductive opiate relieves, and it is relief that is her object and aim.

As to "after-effects" and "reaction," I have the most positive opinions. The effects of the repeated sedations are grievous. As Dr. Crothers says: "The cell functions and growths

are slowed up, retarded, and finally changed." I have noticed it, over and over again, and I can show to-day, boys and girls —especially girls—whose instability of health is traceable to those miserable drugs.

Recognizing this perversion of cell growths and functions, and despairing of having my arguments accommodated with a hearing, I felt it incumbent on me to antagonize these effects, and it is my custom to seize every opportunity to show that the "drops" have done mischief. This is no difficult task, as these children are always complaining of ails and ills. I prescribe two drops of eucalyptol in milk three times a day, and it is good to be able to say that it promotes normal cell nutrition and antagonizes the disaffection of functions. It is my experience that this works admirably, not alone in affording temporary relief, but, moreover, in ensuring permanent results. This is a matter of prophylaxis altogether valuable and interesting, and one to be heartily commended. I am also using the eucalyptol for these youths out of my own clientele, and for others, who, I make no doubt, owe ill health or lessened vigor to the same cause. The results are uniformly excellent.

It is not a pleasant matter to contemplate, but I submit that this "opiumism" of infancy is largely responsible for the mental perverts, the inebriety, and the lack of mental, physical, and moral stamina, so largely in evidence.

Sincerely yours, GIFFARD KNOX, M.D.

The New York Pathological Institute.

HARTFORD, CONN, May 21, 1900.

To the Editor:—The ways of politicians in New York are always mysterious and startling. The unknown is always happening, particularly to institutions that are not well founded in public opinion. In the early sixties an inebriate asylum was founded at Binghamton. Later, the state took charge of it, and after a varied career under "boss rule" it was finally turned into an insane asylum. A little farther on in the history the reformatory at Elmira was founded and conducted on most advanced lines. Then the same old battle concentrated about it and tremendous efforts were made to destroy it, and change it to some other work. Fortunately, this failed. The epileptic asylum has been the center of the controversy, and were it not for very wise management a political battle would have begun to change and break it up before this.

Now comes similar storm and effort to break up the pathologic institute. For reasons unknown and inconceivable, the superintendents of the state hospitals and the politicians are in great doubt as to the value of the work there. They urge abolishment of the work or changing it in some unknown way to the interest of the tax-payers, etc. This institute, inaugurated for the purpose of utilizing and studying the mass of material gathered, is practically a laboratory for the higher study of psychopathy, and is the first one organized in this country. Already its reports give promise of researches of the most practical character on the causes and condition of insanity. The five volumes of papers bearing on these higher questions are the foundations of an entirely new field of psychiatry, and in the work done there is more practical advance and more suggestive study than in the asylum literature of half a century. This institute is designed to make exhaustive studies, both microscopically and statistically, of all the phases of insanity and the various conditions which result in brain defects. This is done by trained experts who have nothing but the facts to ascertain, and have no other duties than those of scientific study. The asylum pathologists are supposed to send specimens of morbid anatomy, histories of disputed cases, and psychologic facts to this institute for final study. Matters which are not clear to the busy physicians on the staffs of these crowded hospitals are sent to this institute for study at leisure. There is in this an almost infinite field of most practical scientific work of the greatest value to every citizen of the state as well as to those of other states.

There is something startling in the adverse feeling of the superintendents of the various asylums to this work, and it is incomprehensible why they should not be its warmest admirers and seek in every way to continue a work which makes their own more and more accurate and scientific. It has been a matter of surprise to visitors at the older insane asylums of the country to find such an enormous accumulation of clinical histories of patients piled away in rooms as so much lumber. The staff has no time and perhaps little ability to study or analyze these records and make practical use of them. An institute could utilize these facts and show their practical meaning as no asylum could. There must be some central head with time and skill to study facts of this character. New York State has taken the lead with the warmest endorsement of every scientific man, and the present effort to break up the institute or narrow and change its work would be a calamity to science. We can not believe that the friends of psychopathy will permit such a change. The very absence of central scientific laboratory work has much to do with the confusion and ignorance of many phases of practical medicine. The whole trend of modern medicine is to centralize and specialize the study of all its various phases so that it can become more and more a science. The threatened destruction of the New York Pathological Institute is one of the perils which we hope may be avoided by wiser counsel and broader views.

T. D. CROTHERS, M.D.

Deaths and Obituaries.

EDWARD ORAM SHAKESPEARE, M.D., Philadelphia, died suddenly, June 1, from chronic cardiac trouble. He was born of distinguished lineage in New Castle County, Delaware, May 19, 1846. He was graduated from Dickinson College in 1867, and from the Medical Department of the University of Pennsylvania two years later. He began the practice of his profession at Dover, Del., but in 1874 removed to Philadelphia, where later he was appointed lecturer on operative ophthalmic surgery in the University of Pennsylvania. He was, in 1885, sent as the representative of the Federal Government to Spain and other European countries in which cholera was prevalent, to investigate the cause, prevention, and cure of that disease. He spent several months abroad in the study of the subject, and made a report to Congress. During the war with Spain he was appointed a brigade surgeon, with the rank of major of volunteers, and at the time of his death he was acting as a member of the commission attached to the office of the Surgeon-General at Washington to investigate the causes of typhoid fever in the United States Army. He was a member of many scientific societies, including the Delaware Medical Society, the Northern Medical Society, the Pathological Society of Philadelphia, and the Philadelphia County Medical Society. He contributed to *The American Journal of Medical Sciences* for January, 1870, a paper on "A New Ophthalmoscope and Ophthalmometer, Devised for Clinical Use and for Physiological and Therapeutical Investigation on Men and Animals," which he had invented.

JAMES T. WHITTAKER, M.D., professor of theory and practice in the Ohio Medical College, died June 5, at his home in Cincinnati, of recurrent intestinal carcinoma. He graduated from Oxford University in 1863, and served for a time in the Union Army as a private. After this service he resumed the study of medicine, but again left college to accept an assistant surgeonship in the Navy, serving on the *Cumberland*. At the close of the war he entered the medical department of the University of Pennsylvania, where he graduated in 1866. He made two trips to Europe, enjoying the advantage of personal instruction from Dr. Robert Koch. He has served on the medical staff of the Cincinnati Hospital and at the time of his death occupied a similar position at the Good Samaritan.

W. H. I. O'MALLEY, M.D., assistant surgeon of the Cal. Twelfth Inf., died in San Francisco, May 24, aged 38 years. He was graduated from the University of California in the department of liberal arts and medicine. In 1898, he became a contract surgeon and was sent to Honolulu, where he remained until he was transferred to the Philippines. He was injured in December and again in February, and returned to San Francisco on the transport *Sherman*, April 25.

L. J. JONES, M.D., Wichita, Kan., died in Galena, Kan.,

May 20. He was born in Kentucky in 1830. He was a graduate of the Transylvania University and of Louisville Medical College. During the Civil War he was for over three years surgeon on the Union side, being connected with the Sixteenth Kentucky Infantry, and in charge of the officers' hospital of the Twenty-third army corps.

GARDNER C. PIERCE, M.D., Ashland, Mass., died May 18, in a hospital, where he had undergone an operation. He was graduated from Harvard University Medical School in 1866, and for over thirty years had practiced in Ashland. He was a member of the Massachusetts Medical Society, and a former president of the South Middlesex Medical Association.

WILLIAM H. CHAMBERLAIN, M.D., died May 21, at his home in Oneida, N. Y. He studied at the University of Michigan two years, then entered the New York Medical College, from which institution he was graduated in 1876. He practiced twenty-one years in Oneida, and three in Utica.

HORACE B. SCOTT, M.D., Jefferson, a surgeon in the U. S. N., died at the home of his father in Wallingford, Conn., May 29, aged 43 years. He was a graduate of Trinity College, Conn., class of 1878, and served in the navy until his health failed.

SAMUEL H. KEEDY, M.D., a native of Washington County, Md., and ex-United States Consul to Rheims and Grenoble, France, died at St. Agnes' Hospital, Baltimore, May 14, of heart disease. During the Civil War he was an assistant surgeon in the Federal Army.

H. C. CHAFFEE, M.D., Tolono, Ill., died May 21, aged 84 years. He was graduated from the Albany Medical College in 1854. After two years of study in Paris, he located in Tolono, where he has since lived.

JOSEPH H. LITTLE, M.D., Washington, Pa., died May 16, aged 65 years. He was graduated from Washington College in 1855, and from the medical department of the University of Pennsylvania in 1859.

SAMUEL C. MAXWELL, M.D., Duluth, Minn., died May 13. He was born in Crawfordsville, Ind., in 1840, and was graduated from Rush Medical College in 1866.

RESOLUTIONS ON DEATH OF DR. WOODRUFF.

At a meeting of the Columbus Academy of Medicine, held May 26, the following resolutions were passed, (An obituary of Dr. Woodruff appeared in last week's JOURNAL):

WHEREAS, Dr. Elmer W. Woodruff, in the early prime of life and rising usefulness, has, by the providence of God, been removed from our number;

Resolved, That we recognize in Dr. Woodruff an honorable and conscientious co-worker, devoted to the highest interests of his profession, as a practitioner and as a teacher (in Starling Medical College).

Resolved, That in his death, the Academy has sustained the loss of an active and useful member, whose high professional honor and exemplary life are worthy of remembrance.

Resolved, That these resolutions be made a part of the records of the Academy, published in the columns of the *Columbus Medical Journal*, and the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and that a copy be transmitted to his family with the profound sympathy of the members of the Academy.

Committee
J. U. BARNHILL.
J. F. BALDWIN.
W. D. DEUSCHLE.

ANDREW TIMBERMAN,
President.
A. M. STEINFELD,
Secretary.

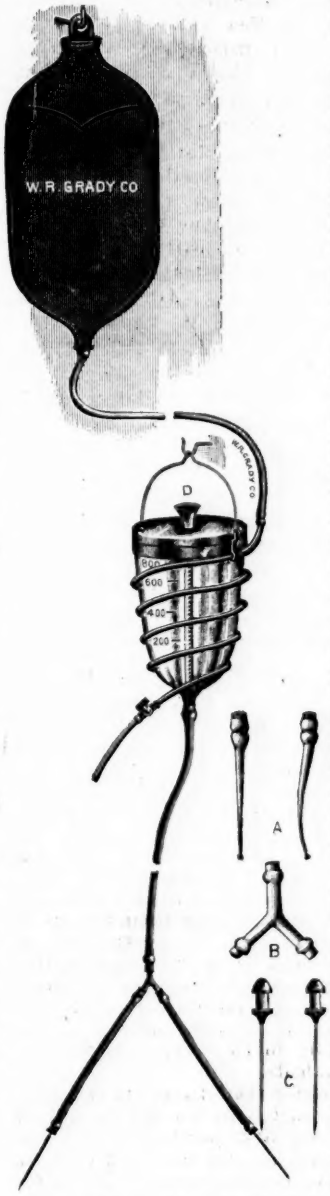
French Medical Sickness Insurance Society.—A society was organized among the physicians of the department of the Seine fourteen years ago, for the purpose of securing a fund to pay an indemnity of $2 a day to members in case of sickness. The reserve fund is now $60,000, and the immense services the society has rendered are an eloquent plea for further organization among members of the profession. It has been predicted that the twentieth is to be a century of association, and an editorial in the *Presse Méd.* of April 25 remarks that the medical profession has more to gain from organization than has any other, that it would "thus transform the weakness of each into the strength of all, as an association has the paradoxical virtue of being stronger than the sum total of its component parts."

New Instrument.

Normal Salt Transfusion Apparatus.

BY CARL HERMAN ANDERSEN, M.D.
CHICAGO.

In common with other workers, I have felt the need of a transfusion apparatus that would accurately sustain an even temperature and maintain a regulated flow, and for this purpose have devised one, which I here present.



A. Glass tubes for intravenous transfusion. It will be noted that they have bulbous ends to avoid injuring the vein when introduced. B. Joint. C. Needles for subcutaneous transfusion. D. Perforation in the lid for sterilized cotton. E. Thermometer. F. Cotton diaphragm. G. Three-quart enema bag. H. Waste pipe.

It consists of a glass jar capable of holding 1000 c.c., as is indicated on its side. A thermometer is suspended in its center. It has a lid with a perforated center, into which sterile cotton is placed to filter the air; a cotton diaphragm inside the jar filters the salt solution. A rubber tube attached to its lower end carries off the solution, and there is a metal coil of tubing entwining the jar, through which is circulated hot water coming from a rubber bag suspended above it, or from an ordinary hot-water faucet. At the lower end of the coil is a stop-cock, to which is attached a rubber tube to carry off the hot water which circulates in the coil.

If this apparatus is used in a hospital, it can very readily be attached to the hot-water faucet, or to the hot-water boiler, and the water flowing through the glass will keep the saline solution at an even temperature. If it is used in private practice, all that is necessary is to fill the rubber bag, which holds three quarts of water, and allow it to flow through as fast as it can be carried off through the waste pipe. The opening in the latter is made so that it will take about thirty minutes to carry off the three quarts of water, and as that is as long as it takes to administer an intravenous or subcutaneous transfusion, it answers all purposes of a stationary boiler.

When we consider that intravenous or subcutaneous infusion of normal salt solution is performed only in cases where there has been considerable hemorrhage, or where the patient is in a critical condition, it can readily be seen that if a solution is used which is below the normal blood heat, it must do harm, as, instead of decreasing the shock, it will increase it. It must also be remembered that in ordinary transfusion apparatus, that is, the kind in general use, the solution will lose from 10 to 14 degrees in heat, and as it flows through the rubber tube it loses from .5 to .75 degree for every foot. From this, it can readily be seen that the last half of the transfusion is done with water much below the normal blood heat.

Miscellany.

Committee of Revision of the United States Pharmacopeia.—The eighth decennial convention for revising the United States Pharmacopeia elected the following committee for revision, the medical or pharmaceutical bodies represented being in parentheses: Charles Rice (chemist, public drug department), New York City, chairman; Joseph J. Remington (Phila. Coll. of Pharm.), Philadelphia, vice-chairman; Reynold W. Wilcox (Med. Soc. State of N. Y.), New York City; Edward H. Squibb (N. Y. Academy of Med.), Brooklyn, N. Y.; Virgil F. Coblentz (N. Y. Coll. of Pharm.), New York City; Willis G. Gregory (Buffalo Coll. of Pharm.), Buffalo, N. Y.; Wilbur L. Scoville (Mass. Coll. of Pharm.), Boston; Hobart A. Hare (AM. MED. ASSN.), Philadelphia; John Marshall (Univ. of Pa., Med. Dept.), Philadelphia; Samuel P. Sadtler (Phila. Coll. of Pharm.), Philadelphia; Henry Kraemer (Phila. Coll of Pharm.), Philadelphia; John J. Abel (Johns Hopkins Univ., Med. Dept.), Baltimore, Md.; Charles Caspari (Md. Coll. of Pharm.), Baltimore, Md.; Alfred R. L. Dohme (Am. Pharm. Assn.), Baltimore, Md.; George F. Payne (Atlanta Coll. of Pharm. and Sur.), Atlanta, Ga.; Albert B. Lyons (Mich. Pharm. Assn.), Detroit, Mich.; Alonzo B. Stevens (Mich. Univ., Pharm. School), Ann Arbor, Mich.; Nathan S. Davis, Jr., (N. W. Univ., Med. School), Chicago; Walter S. Haines (Rush Medical College), Chicago; Oscar Oldberg (N. W. Univ., Pharm. School), Chicago; Carl S. N. Hallberg (Chicago Coll. of Pharm., Univ. of Ills.), Chicago; John M. Good (St. Louis Coll. of Pharm.), St. Louis, Mo.; C. Lewis Diehl (Louisville Coll. of Pharm.), Louisville, Ky.; Lucius E. Sayre (Kan. Univ., Pharm. School), Lawrence, Kan.; Edward Kremers (Wis. Univ., Pharm. School), Madison, Wis.; Horatio C. Wood (Univ. of Pa.), president of the Pharmacopeial convention—*ex-officio*.

Scope of the Pharmacopeia.—The Committee of Revision is authorized to admit into the pharmacopeia any products of Nature of known origin; also any synthetized product of definite composition which is in common use by the medical profession, the identity, purity, or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights.

Doses.—After each pharmacopeial article—drug, chemical, or preparation—which is used or likely to be used internally or hypodermically, the Committee is instructed to state the average approximate—but neither a minimum nor a maximum—dose for adults, and, where deemed advisable, also for children. It is to be distinctly understood that neither this convention nor the Committee of Revision created by it intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable. The committee is directed to make a distinct declaration to this effect in some prominent place in the new pharmacopeia, the metric system to be used and the equivalents to be given, parenthetically in customary weights and measures, in approximate equivalents.

Nomenclature.—It is recommended that changes in the titles of articles at present official be made only for the purpose of insuring greater accuracy, or safety in dispensing. In the case of newly-admitted articles, it is recomended that such titles be chosen as are in harmony with general usage and convenient for prescribing; but in the case of chemicals of a definite composition a scientific name should be given at least as a synonym.

Assay Processes.—The Committee is instructed to append assay processes to as many of the potent drugs and preparations made therefrom as may be found possible, provided that the processes of assay are reasonably simple—both as to methods and apparatus required—and lead to uniform results in different hands. As regards the products of such assays, tests of identity and purity should be added wherever feasible. Physiologic tests for determining strength should not be introduced by the Committee.

Purity and Strength of Pharmacopeial Articles.—The Committee is instructed to revise, as carefully as possible, the limits of purity and strength of the pharmacopeial chemicals and preparations for which limiting tests are given. While no concession should be made toward a diminution of medicinal value, allowance should be made for unavoidable, innocuous impurities or variations due to the particular source or mode of preparation, or to the keeping qualities of the several articles. In the case of natural products, the limits of admissible impurities should be placed high enough to exclude any that would not be accepted by other countries. Regarding the strength of diluted acids, tinctures, and galenical preparations in general, it is recommended that the Committee keep in view the desirability of at least a gradual approach upon mutual concessions toward uniformity with similar preparations of other pharmacopeias, particularly in the case of potent remedies which are in general use among civilized nations.

General Formulas.—It is recommended that general formulas be introduced, as far as the particular nature of the several drugs will permit, for fluid extracts, tinctures, and such other preparations as are made by identical processes, and that the general formula to be followed in each case be merely indicated by reference.

Weights and Measures.—The Committee is instructed to retain the metric system of weights and measures adopted in the seventh decennial revision.

Precedents.—In all matters not specially provided for in these "General Principles," the rules established for previous revisions if there are any, should be followed.

Supplements.—The Committee of Revision is authorized to prepare a supplement whenever such action may be deemed desirable or practicable.

An Army Hospital in the Philippines.—Major S. C. Mills, inspector-general, U. S. A., made an inspection of the Santa Mesa Hospital, March 13, the report of which has just been received by the U. S. War Department. It is interesting, as giving a full description of the hospital and its management from the point of view of one who is a soldier but not a medical officer. The hospital is situated three miles east by north of the Palace, City of Manila, on the Calle Santa Mesa. A blue print, without description, shows the arrangement of the buildings, which were erected originally as barracks, but were turned over to the medical department on Nov. 4, 1899. The first patient was received November 10, following. The wards, six long pavilions, are arranged, three facing the other three, on a street or enclosure 200 feet wide. This street is prolonged at one end by three sets of nurses' quarters on one side, and on the other three buildings—an office and two quarters for hospital men. Officers' quarters close in one of the ends, and storage buildings and stables the other. The length of the enclosure thus formed is about 500 yards; about midway of its length is the dispensary building, and near the stable is the guard-house. All these buildings are of native construction, the frames being bamboo and the sides and roof, nipa; while the partition walls do not reach the roof. The floors are of split bamboo and well raised from the ground. There are covered verandas along the front and ends of each building, and the result is well-ventilated apartments which are probably as cool as can be constructed in that climate. Each ward building is nearly 300 feet long, and is divided into two sections by a room in the center for the wardmaster's daily supplies and dispensaries. A mess-room and kitchen are connected with each ward building by covered ways in the rear, and beyond these each has a separate building for its sinks, with a bath-house, containing four showers. This arrangement of the buildings makes each ward complete in itself, with its mess-room, kitchen, closets and bath-room attached. The capacity of the hospital is 650 beds; at present five wards are occupied, three medical, one surgical and medical, and one venereal, the last being used as a lock ward for venereal cases from the other military hospitals in the City of Manila.

Since the hospital was opened, Nov. 10, 1899, the number of cases treated has been: regulars, 840; volunteers, 1372; total, 2212; the number of deaths, 24, of which 6 were from dysentery, 5 from diarrhea, 3 each from typhoid and malarial fevers, 2 from injury, 1 from gastric disorder and 4 from other causes. The number present at the time of inspection was 289, of which 111 were venereal, 60 malarial fever, 30 dysentery, 11 diarrhea, 15 dengue, and 7 surgical cases. No case of typhoid fever was present.

The clothing of patients is taken from them on entry and stored under lock in a clothing room, while pajamas, hats, shoes and stockings are issued for use. Pajamas are thus, so to speak, the uniform of the hospital patients, and this has the advantage of making a patient always recognizable, and he can not, unknown, cross the line of sentinels. The bunks

are of iron with woven-wire mattresses; and in each ward there are on duty during the day two wardmasters, two female nurses, and six hospital corps men; during the night, four attendants. Hospital corps men work in twelve-hour shifts, and female nurses in eight. The patients are fed from the regulation allowance of forty cents a patient a day. The low price of beef permits this sum to be just sufficient. Full, light, and special diets are prepared in the kitchen of each ward, and in each is a chief cook, who is a hospital corps man, two Chinese cooks and four Chinese mess-room attendants. The kitchens were found to be neat, clean and well supplied; and the food well-prepared and served. Supplies from the subsistence department are good and furnished promptly; bread is purchased in the city and is of excellent quality; ice is furnished by the medical department; water is from the city mains, but is filtered before use for drinking purposes. The food for the sick is inspected by the ward surgeons, the nurses and the medical officer of the day. The inspector cites bills of fare for each ward from March 5 to 11, inclusive. The March 5 bill is submitted as an illustration.

Breakfast.

FULL DIET.	SPECIAL DIET.
Dry corn beef hash.	Poached eggs on toast.
Corn bread with molasses.	Boiled rice with milk and sugar.
Boiled rice with milk and sugar.	Coffee.
Bread, butter, coffee.	

Dinner.

Beef soup.	Beef soup.
Roast beef.	Bread pudding.
Brown gravy, mashed potatoes.	Canned apples.
	Bread and tea.
Bread pudding with sauce.	
Stewed apples, bread, tea.	

Supper.

Hamburger steak.	Mock turtle soup.
Boiled potatoes.	Dry toast.
Canned peas, stewed.	Soda crackers.
Stewed prunes.	Stewed apples.
Bread and tea.	Bread and tea.

The dispensary is in excellent condition. There is a good operating-room, with the necessary instruments and appliances, and also a chemical and bacteriologic laboratory. The surgeon in charge makes a stated inspection of the entire hospital once a week; the officer of the day inspects twice daily, in the morning and after taps; ward surgeons make regular rounds twice a day and such other visits to particular patients as are required. The books are correctly and neatly kept. There is a hospital fund properly accounted for; balance verified at inspection, $100.10. There is a system of calls similar to that of military posts. Proper precautions are taken to guard against fire. Laundry work for the hospital is done in the city on contract at 2 cents, gold, per piece.

The general condition of the hospital is extremely good. The hospital is clean, comfortable, well-equipped and well run. An excellent system of record of the admission, diagnosis, treatment, transfer or other disposition of each patient, has been devised; and the history of each case is complete. Major E. B. Moseley, surgeon, U. S. A., has been in charge of this hospital since its organization, and the condition of the hospital now is a great tribute to his professional and executive skill and ability.

BOOKS AND PAMPHLETS RECEIVED.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

BOOKS.

A TREATISE ON NASAL SUPPURATION; or Suppurative Diseases of the Nose and the Accessory Sinuses. By Dr. Ludwig Grunwald. Translated from the Second German Edition, by William Lamb, M.D., M.C., M.R.C.P. With eight illustrations in the Text, two Plates, and one Table. Cloth, Pp. 335. Price $3. New York: Wm. Wood & Co. 1900.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia; with the Collaboration of John Ashhurst, Jr., M.D., LL.D.; and Charles H. Reed, M.D., Philadelphia; James T. Whittaker, M.D., LL.D., Cincinnati, with regular correspondents in Montreal, London, Paris, Leipsic, and Vienna. Volume I. Tenth Series, 1900. Cloth. Pp. 315. Price $2.75. Philadelphia: J. B. Lippincott Co. 1900.

ANNUAL OF ECLECTIC MEDICINE AND SURGERY. Edited by John V. Stevens, M.D. Vol. VIII, Embracing the Papers and Proceedings of the Various State Eclectic Medical Societies for the years 1897 and 1898. 8vo., Pp. 538. Cloth. Price $2. Cincinnati, Ohio: The Scudder Brothers Co. 1900.

TWENTY-FIFTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the fiscal year ending June 30, 1897. Cloth. Pp. 600. Lansing, Mich.: Robert Smith Printing Co. 1899.

PROCEEDINGS AND ADDRESSES AT A SANITARY CONVENTION HELD AT TRAVERSE CITY, MICHIGAN, AUG. 22 AND 23, 1899. Under the direction of a Committee of the State Board of Health and a Committee of Citizens of Traverse City. (Supplement to the Report of the Michigan State Board of Health for the Year 1900.) Paper. Pp. 105. Lansing, Mich.; Robert Smith Printing Co. 1900.

REPORT OF THE TRUSTEES OF THE NEWBERRY LIBRARY. For the year 1899. Paper. Pp. 64. Chicago: Hollister Bros. 1900.

CITY OF FALL RIVER, MASS. REPORT OF THE BOARD OF HEALTH for the year ending Dec. 3, 1899. Paper. Pp. 70. Fall River, Mass.: J. H. Franklin & Co. 1900.

THE OPHTHALMIC PATIENT. A Manual of Therapeutics and Nursing in Eye Diseases. By Percy Fridenberg, M.D., Ophthalmic Surgeon to the Randall's Island and Infants' Hospitals. Cloth. Pp. 310. Price, $1.50. New York: The MacMillan Co. 1900.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS: With Especial Reference to the Application of Remedial Measures to Disease and Their Employment Upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With Special Chapters by Drs. G. E. deSchweinitz, Edward Martin and Barton C. Hirst. New (8th) Edition. In One Octavo Volume of 796 pages, with 37 Engravings and 3 Colored Plates. Cloth, $4; Leather, $5, net. Philadelphia and New York: Lea Brothers & Co.

TEXT-BOOK OF MEDICAL TREATMENT OF DISEASES AND SYMPTOMS, for Use of Students and Practitioners of Medicine. By Nestor Tirard, M.D., F.R.C.P., Professor of Principles of Medicine, King's College, London. Adapted to the U. S. Pharmacopeia by E. Quin Thornton, M.D., of Jefferson Medical College, Philadelphia. Octavo. Pp. 624. Just Ready. Cloth, $4 net. Philadelphia and New York: Lea Brothers & Co.

CLINICAL EXAMINATION OF URINE WITH AN ATLAS OF URINARY DEPOSITS. Including Forty-one Original Plates, Mostly Colored. By Lindley Scott, M.A., M.D. Cloth. Price, $5. Philadelphia: P. Blakiston's Son & Co. 1900.

PRACTICAL TREATISE ON THE SEXUAL DISORDERS OF THE MALE AND FEMALE. New (2d) Edition. By Robert W. Taylor M.D., Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. Octavo. Pp. 435, with 91 Illustrations and 13 Plates in Colors and Monochrome. Cloth, $3 net. Philadelphia and New York: Lea Brothers & Co.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION for the Year 1899. Volume XVI. Edited for the Association by M. C. O'Brien M.D., of New York County. Cloth. Pp. 887. New York: Published by the Association.

DISEASES OF THE INTESTINES. A Text-Book for Practitioners and Students of Medicine. By Max Einhorn, M.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital. Cloth. Pp. 390. Price, $3. New York: Wm. Wood & Co. 1900.

PAMPHLETS.

TREATMENT OF VENEREAL ULCERS. N. E. Aronstam, M.D., Ph.G. Reprinted from Medical Age.

SIX CASES OF CHRONIC HEART DISEASE SUCCESSFULLY TREATED BY THE SCHOTT METHOD. Victor Neesen, M.D. Reprinted from N. Y. Med. Jour.

NON-MALIGNANT GASTRIC AND DUODENAL ULCERS: WITH ILLUSTRATIVE CASES. Thomas Satterthwaite, M.D., New York. Reprinted from Med. Record.

TRADE PAMPHLETS.

MONOGRAPHS FROM RESEARCH LABORATORY OF SHARP AND DOHME. No. 1. The History, Pharmacognosy and Chemistry of Cascara Sagrada. By Alfred R. L. Dohme, Ph.D., and Herman Engelhardt, Ph.D. Baltimore, Md.

A CATALOGUE OF INSTRUMENTS USED IN THE PRACTICE OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY. Manufactured by Mayer & Meltzer, London, England.

ST JOSEPH SANITARIUM AND BATH HOUSE, AND THE CURATIVE WATERS OF MT. CLEMENS, MICH.

The Public Service.

NAVY CHANGES.

Changes in the Medical Corps of the Navy for the week ending May 19, 1900.

Medical Director T. C. Walton, detached from duty at the naval laboratory, Brooklyn, N. Y., and from other duty May 20, and ordered home to wait orders and retirement May 31, at 62 years of age.

P. A. Surgeon W. C. Braisted, orders to the *Mayflower* revoked. When the *Detroit* is placed out of commission detached and ordered home and directed to hold himself in readiness for orders to sea.

P. A. Surgeon G. D. Costigan, detached from the Boston Navy Yard, May 29, and ordered to temporary duty on the *Pensacola* and then to the Asiatic Station via the *Gaelic*.

Assistant Surgeon E. Davis, detached from the naval hospital, Brooklyn, N. Y., May 29, and ordered to temporary duty on the *Pensacola* and then to the Asiatic Station via the *Gaelic*.

Assistant Surgeon J. T. Kennedy, detached from the *Independence*, June 4, and ordered to the Asiatic Station via the *Gaelic*.

Assistant Surgeon T. M. Lippett, detached from the *Ortgon*, and ordered to the *Newark*.

Pharmacist S. W. Douglas, detached from the *Wabash* and or-

dered to the Key West naval station for such duty as may be assigned as relief of Pharmacist I. N. Hurd.

Pharmacist I. N. Hurd, upon reporting of relief, detached from the Key West naval station and ordered to the *Wabash*.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ending May 24, 1900.

Surgeon R. M. Woodward, to proceed to Porto Rico on special temporary duty.

P. A. Surgeon J. M. Eager, relieved from duty at Cincinnati, Ohio, and directed to proceed to Norfolk, Virginia, and assume command of the service.

Assistant Surgeon John McMullen, Bureau order of April 2, 1900, directing Assistant Surgeon McMullen to assume command of the Tortugas Quarantine, temporarily revoked, and directed to report to medical officer in command of that station for duty.

Assistant Surgeon John W. Kerr, Bureau order of May 7, 1900, directing Assistant Surgeon Kerr to proceed to Hongkong, China, for duty, suspended, and directed to report to medical officer in command, San Francisco Quarantine (Cal.) for temporary duty.

Assistant Surgeon J. W. Schereschewsky, relieved from duty at Havana, Cuba, and directed to proceed to New Orleans, La., and report to medical officer in command for duty and assignment to quarters.

Assistant Surgeon J. W. Amesse, Bureau order of May 7, 1900, directing Assistant Surgeon Amesse to proceed to Honolulu, Hawaii, for temporary duty, suspended, and directed to report to medical officer in command, San Francisco Quarantine (Cal.) for temporary duty.

Assistant Surgeon R. L. Wilson, to report to medical officer in command San Francisco Quarantine (Cal.) for duty.

Assistant Surgeon T. D. Berry, upon being relieved from duty at New Orleans, La., to proceed to Havana, Cuba, and report to Surgeon H. R. Carter for duty.

Assistant Surgeon R. H. Earle, relieved from duty at Detroit, Michigan, and directed to proceed to the San Francisco Quarantine (Cal.) and report to the medical officer in command for duty.

Assistant Surgeon B. J. Lloyd, relieved from duty at Chicago, Illinois, and directed to proceed to the San Francisco Quarantine (Cal.) and report to the medical officer in command for duty.

Acting Assistant Surgeon B. W. Goldsborough, granted leave of absence for two days.

Acting Assistant Surgeon J. W. Stevens, to assume temporary charge of the service at Cincinnati, Ohio, vice P. A. Surgeon J. M. Eager, relieved.

Acting Assistant Surgeon W. O. Wetmore, relieved from duty at the Immigration Depot, New York, N. Y., and directed to report to the medical officer in command, Cape Charles Quarantine (Va.) for duty and assignment to quarters.

Hospital Steward A. M. Roabrig, to report to medical officer in command, San Francisco Quarantine (Cal.) for special temporary duty.

Hospital Steward S. W. Richardson, to report at Washington, D. C., for special temporary duty.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon General, U. S. Marine-Hospital Service, during the week ended June 2, 1900.

District of Columbia: Washington, May 12-19, 5 cases, 1 death;

Colorado: Archulita Co., May 19, 2 cass; Arapahoe Co., May 19, 2 cases; Boulder Co., May 19, 1 case; Otero Co., May 19, 3 cases; Pueblo Co., May 19, 2 cases; San Miguel Co., May 19, 1 case.

Illinois: Cairo, May 12-26, 4 cases.

Indiana: Evansville, May 19-26, 1 case; Indianapolis, May 12-19, 7 cases.

Kansas: Wichita, May 19-26, 7 cases.

Kentucky: Covington, May 19-26, 8 cases.

Louisiana: New Orleans, May 12-26, 78 cases, 22 deaths; Shreveport, May 19-26, 3 cases.

Massachusetts: Fall River, May 19-26, 1 case; Lowell, May 19-26, 2 cases.

Michigan: Detroit, May 12-19, 3 cases; Grand Rapids, May 12-19, 5 cases, 1 death.

Minnesota: Minneapolis, April 28 to May 5, 54 cases, 3 deaths.

New Mexico: Capitan, May 7-21, 11 cases.

New York: New York, May 19-26, 4 cases.

Ohio: Cleveland, May 19-26, 32 cases.

Oregon: Portland, May 17, 1 case.

South Carolina: Greenville, May 12-19, 2 cases.

Utah: Salt Lake City, May 12-26, 6 cases.

Virginia: Petersburg, April 26 to May 26, 2 cases.

Washington: Tacoma, May 12-19, 1 case.

Wisconsin: Door Co., May 22, 8 cases; Douglas Co., May 22, 8 cases; Eau Claire Co., May 22, 10 cases; Kewaunee Co., May 22, 6 cases; Pierce Co., May 22, 1 case; St. Croix Co., May 22, 70 cases, 1 death; Waupaca Co., May 22, 3 cases, 1 death.

Wyoming: Cheyenne, May 19, 3 cases; Rock Creek, May 19, 2 cases; Sweetwater Co., May 19, 18 cases; Green River, May 19, 18 cases; Evanston, May 19, 6 cases; Aspen, May 19, 1 case; Tunnel, May 19, 13 cases.

SMALLPOX—FOREIGN.

Austria: Prague, April 28 to May 12, 9 cases.

Belgium: Antwerp, May 5-12, 6 cases.

Brazil: Rio de Janeiro, March 31 to April 13, 14 cases, 11 deaths.

Canada: Ontario—Collingwood, May 16, 1 case; Sault Ste Marie, May 16, prevalent; Manitoba—Winnipeg, May 12-26, 16 cases, 3 deaths.

China: Hongkong, April 7-21, 1 case, 1 death.

Egypt: Cairo: April 1 to May 6, 55 deaths.

England: Liverpool, May 5-12, 8 cases, 1 death; London, April 28 to May 12, 11 cases, 1 death; Southamptom, May 12-19, 1 case.

France: Lyons, April 21 to May 12, 8 deaths.

Germany: May 5-12, 2 cases.

Gibraltar: April 28 to May 13, 4 cases.

Greece: Athens, May 5-12, 3 cases, 4 deaths.

India: Bombay, April 17 to May 1, 101 deaths; Calcutta, March 24 to April 7, 102 deaths; Kurrachee, April 15-29, 45 cases, 19 deaths; Madras, April 7-27, 2 deaths.

Italy: Leghorn, May 5-12, 1 case, 1 death.

Mexico: Chihuahua, May 12-19, 1 death; Vera Cruz, May 12-19, 4 cases, 4 deaths.

Russia: Odessa, April 28 to May 12, 15 cases, 4 deaths; St. Petersburg, April 28 to May 5, 15 cases, 3 deaths; Warsaw, April 22 to May 5, 6 deaths.

Scotland: Glasgow, May 11-18, 27 cases, 1 death.

Spain: Corunna, May 5-12, 1 death; Madrid, April 21 to May 5, 16 deaths; Valencia, May 12-19, 1 case.

Straits Settlements: Singapore, April 1-21, 11 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, March 31 to April 13, 47 cases, 34 deaths.

Colombia: Panama, May 15-22, 7 cases, 4 deaths.

Cuba: Cienfuegos, May 26, 5 cases, 3 deaths, at Santa Clara barracks.

CHOLERA.

India: Bombay, April 17 to May 1, 37 deaths; Calcutta, March 24 to April 7, 217 deaths; Madras, April 7-13, 1 death.

Japan: Osaka and Hiogo, April 21-28, 1 case.

PLAGUE.

China: Hongkong, April 7-21, 40 cases, 35 deaths.

India: Bombay, April 17 to May 1, 894 deaths; Calcutta, March 24-31, 1599 deaths; Kurrachee, April 16-29, 763 cases, 622 deaths.

Japan: Osaka, April 8 to May 14, 11 cases, 3 deaths; Shidzouka, May 7, 1 case.

CHANGE OF ADDRESS.

Dr. B. Agin, from 2236 to 2336 Bellefontaine St., Kansas City, Mo.

Dr. L. Andrews, from 356 Marshfield Ave. to 356 S. Hermitage Ave., Chicago, Ill.

Dr. D. W. Byers, from Woburn to 12 Rutland Square, Boston, Mass.

Dr. F. E. Bellinger, from Omaha, Neb., to Laurens, Iowa.

Dr. W. M. L. Coplin, from 1419 S. Broad St., Philadelphia, to Grassland, W. Va.

Dr. R. F. Currie, from Galveston to Lott, Texas,

Dr. H. S. Chandler, from Woodward, O. T., to Glen Allen, Mo.

Dr. M. C. Cornelius, from 4725 to 4710 Calumet Ave., Chicago.

Dr. J. L. Campbell, from 34½ Peachtree St. to Prudential Bldg., Atlanta, Ga.

Dr. J. C. Da Costa, from 1633 Arch St. to 247 S. 13th St., Philadelphia, Pa.

Dr. J. C. Flippin, from Univ. of Va., Charlottesville, to 1015 N. Main St., Danville, Va.

Dr. K. W. Field, from 1312 Canal St., New Orleans, La., to 245 Willburn St., Dallas, Texas.

Dr. H. S. Foringer, from Chicago, Ill., to Kaylor, Pa.

Dr. P. H. Fisher, from Detroit to Coloma, Mich.

Dr. G. W. Finley, from 150 to 1416 N. Meridian St., Brazil, Ind.

Dr. M. J. Friedel, from 1228 Milwaukee Ave. to 566 N. Ashland Ave., Chicago, Ill.

Dr. A. D. Fraser, from 6860 to 6901 Halsted St., Chicago, Ill.

Dr. H. Forline, from Bradbury Blk. to Douglas Blk., Los Angeles, Cal.

Dr. C. J. Gibson, from care Maltine Co. to 227 N. Central Ave., Austin, Chicago.

Dr. W. A. Gillespie, from 1708 to 1204 Canal St., New Orleans, La.

Dr. H. F. Goodwin, from 531 W. Adams St. to 511 Ashland Boul., Chicago, Ill.

Dr. E. S. Goodhue, from 1514 N. 20th St., Los Angeles, to Piru City, Cal.

Dr. H. C. Homer, from 2301 Indiana Ave. to 2515 Wabash Ave., Chicago, Ill.

Dr. R. S. Jackson, Galveston to Double Bayou, Texas.

Dr. T. T. Jacobson, from The Laurel, Cleveland to Ravenna, Ohio.

Dr. S. Jakubowski, from 535 Garfield Ave. to Cook County Hospital, Chicago, Ill.

Dr. W. A. Jaquith, from 3841 Rhodes Ave. to 5713 Drexel Ave., Chicago, Ill.

Dr. J. J. Johnson, from St. Louis, Mo., to Russell, Kansas.

Dr. J. R. W. Kerr, from Mt. Pleasant, Miss., to Sachse, Texas.

Dr. W. P. Kingsbury, from 203 E. 19th St. to 335 2nd Ave., New York, N. Y.

Dr. O. E. Linjer, from St. James to 830 22nd Ave. S., Minneapolis, Minn.

Dr. J. J. Lloyd, from 28 E. Lawn St., Charlottesville, to 704 Pearl St., Lynchburg, Va.

Dr. B. Levenberg, from 154 Orange St. to 288 Woodland Ave., Cleveland, Ohio.

Dr. J. S. Lennon, from Washington D. C., to The Shelburne, Atlantic City, N. J.

Dr. R. R. Loomis, from Keosauqua, Ia., to Brock, Mo.

Dr. F. Lydston, from Hotel Luzerne to 570 Fullerton Ave., Chicago, Ill.

Dr. E. A. Lawbaugh, from 239 La Salle St. to 2754 N. Hermitage Ave., Chicago, Ill.

Dr. John Morris, from 118 E. Franklin St., Baltimore, Md., to Sykesville, Md.

Dr. S. S. Norsman, from Madison, Wis., to Cape Nome, Alaska.

Dr. D. A. Payne, from Gainesville, Texas, to 866 Monroe St., Chicago.

Dr. L. C. Pratt, from Columbus to Bellefontaine, Ohio.

Dr. W. A. Robison, from Amsterdam to Filley, Mo.

Dr. W. J. McRoberts, from 417 S. Garrison St., St. Louis, to Jefferson City, Mo.

Dr. J. A. Simpson, from Burnside, Ky., to Oneida, Tenn.

Dr. L. C. Snell, from 1615 N. 7th St., Kansas City, to Noel, Mo.

Dr. J. Starkweather, from St. Louis, Mo., to Harris, Kans.

Dr. J. E. Streker, from Chattanooga, Tenn., to Logansport, Ind.

Dr. J. T. McShane, from 26 E. Ohio to 229 N. Penn St., Indianapolis, Ind.

Dr. E. A. Sickels, from 117½ to 91½ Galena Ave., Dixon, Ill.

Dr. P. A. Sullivan, from 281 Jackson Boul., to 293 Monroe St., Chicago.

Dr. L. W. Shannon, from 298 Maxwell St., to Alexian Brothers Hospital, Chicago.

Dr. J. P. Sheppard, from Columbia, Tenn., to Krause Building, Little Rock, Ark.

Dr. O. V. Session, from Box 43, Los Angeles, to Hueneme, Cal.

Dr. F. V. Watson, from Roberts to Baldwin, Wis.

Dr. J. W. White, from St. James to Senath, Mo.

Dr. C. C. Williams, from 716 Westlake, Los Angeles, Cal., to Hartford, Conn.